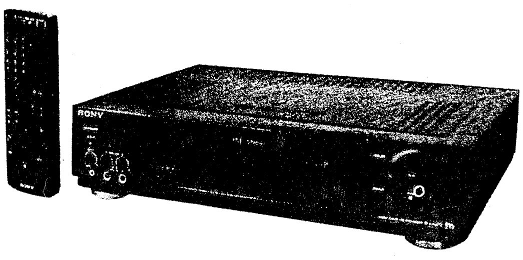
V18702

SLV-K862CH/K862PS/K872MN/K872PS/KH3CH/KH3ME/KH3PS

RM-165/V165A/V165C

SERVICE MANUAL

Chinese Model
SLV-K862CH/KH3CH
E Model
SLV-K862PS/K872MN/K872PS/KH3PS
ME Model
SLV-KH3ME
Tourist Model
SLV-K862PS



Remote commander is available as a unit.
See page 5-1 for repair parts.

Photo : SLV-K872MN/RMT-165

VHS
PAL NTSC
Hi-Fi

H MECHANISM

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT IV (H MECHA) for MECHANICAL ADJUSTMENTS. (9-973-623-11)** VC3056 # 2017.183

SPECIFICATIONS

(SLV-K862CH/K862PS/K872MN/K872PS)

System

Channel coverage
VHF R1 – R12, E2 – E12, NZ1
UHF E21 – E69, R21 – R69
CATV S01 – S05, S1 – S41

RF output signal
UHF channels 28 – 55

Aerial out
75-ohm asymmetrical aerial socket

Inputs and outputs

LINE IN 1
VIDEO IN, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (2)
Input level: 327 mVrms
(0 dBs = 775 mVrms)
Input impedance: more than 47 kilohms

LINE IN 2
VIDEO IN, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (2)
Input level: 327 mVrms
(0 dBs = 775 mVrms)
Input impedance: more than 47 kilohms

LINE OUT
VIDEO OUT, Phono jack (1)
Output signal: 1Vp-p, 75 ohms, unbalanced, sync negative
AUDIO OUT: Phono jack (2)
Rated output level: 327 mVrms
(0 dBs = 775 mVrms)
Load impedance: more than 47 kilohms
Output impedance: less than 10 kilohms

General

Power requirements
110 - 240 V AC, 50/60 Hz

Power consumption
27W

Operating temperature
5°C to 40°C

Storage temperature
–20°C to 60°C

Dimensions
Approx. 430 × 103 × 323 mm (w/h/d)
including projecting parts and controls

Mass
Approx. 5.0 Kg

— continued on next page —

VIDEO CASSETTE RECORDER

SONY®

MICROFILM

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Audio/video cable (1)
Mains lead (1)
Microphone (1)

Design and specifications are subject to change without notice.

SPECIFICATIONS (SLV-KH3CH/KH3ME/KH3PS)

System

RF output signal
UHF channels 30 – 39

Aerial out
75-ohm asymmetrical aerial socket

Inputs and outputs

LINE IN 1
VIDEO IN, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (2)
Input level: 327 mVrms
Input impedance: more than 47 kilohms

LINE IN 2
VIDEO IN, Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative
AUDIO IN, Phono jack (2)
Input level: 327 mVrms
Input impedance: more than 47 kilohms

LINE OUT 1
VIDEO OUT, Phono jack (1)
Output signal: 1Vp-p, 75 ohms, unbalanced, sync negative
AUDIO OUT: Phono jack (2)
Rated output level: 327 mVrms
Load impedance: more than 47 kilohms
Output impedance: less than 10 kilohms

LINE OUT 2
VIDEO OUT, Phono jack (1)
Output signal: 1Vp-p, 75 ohms, unbalanced, sync negative
AUDIO OUT: Phono jack (2)
Rated output level: 327 mVrms
Load impedance: more than 47 kilohms
Output impedance: less than 10 kilohms

General

Power requirements
110 - 240 V AC, 50/60 Hz

Power consumption
21 W

Operating temperature
5°C to 40°C

Storage temperature
–20°C to 60°C

Dimensions
Approx. 430 × 103 × 313 mm (w/h/d)
including projecting parts and controls

Mass
Approx. 4.9 Kg

Supplied accessories

Remote commander (1)
R6 (size AA) batteries (2)
Aerial cable (1)
Audio/video cable (1)
Mains lead (1)
Microphone (1)
Plug adaptor (1) *(SLV-KH3ME only)*

Design and specifications are subject to change without notice.

* The abbreviations of K862, K872 and KH3 contained in this service manual are indicated when these models are common to all their corresponding models as given below.

Abbreviated model name	All model names
K862	K862CH/K862PS
K872	K872MN/K872PS
KH3	KH3CH/KH3ME/KH3PS

The remote commander used for each model is as follows.

- RMT-V165 : SLV-K872MN/K872PS MODEL
- RMT-V165A : SLV-K862CH/K862PS MODEL
- RMT-V165C : SLV-KH3CH/KH3ME/KH3PS MODEL

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, perticularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit board Repairing.
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SERVICE NOTE

1. REMOVAL OF DRUM ASSEMBLY

1) Remove the screw ① (P3×8).
2) Remove the shaft ground assembly ②.
3) Remove three screws ③ (P3×6).
4) Remove the drum assembly ④.

Note: When attaching the drum assembly, be careful not to blur the contacting surface with fingerprint or like.
When attaching the shaft ground assembly, be careful not apply force to the spring section of it.

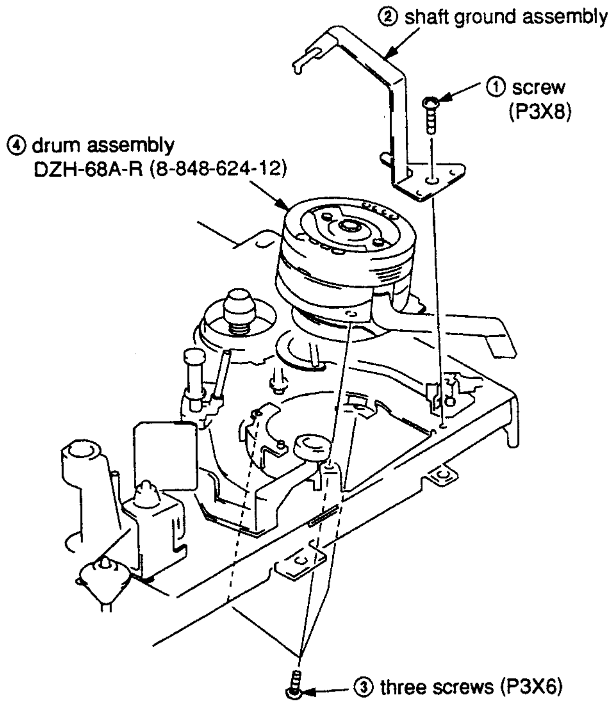

② shaft ground assembly
① screw (P3X8)
④ drum assembly DZH-68A-R (8-848-624-12)
③ three screws (P3X6)

Fig. 1.

2. UPPER DRUM REPLACEMENT

2-1. Removal of Upper Drum

1) Remove the screw ① (P3×8).
2) Remove the shaft ground assembly ②.
3) Completely remove the rotary upper drum board and desolder the soldering indicated by the arrows. (16 points)
4) Remove the screws ③ (PSW3×8) and tape out the rotary upper drum assembly in the direction of arrow. (See Fig. 3.)
If it is difficult, remove by shaking the rotary upper drum gradually.
Note: If the drum can not be removed, check whether the solders have been removed or not again.

2-2. Mounting Upper Drum

1) Mount the rotary upper drum assembly by aligning marked ➡ with marked ⇛ of rotary transformer board (lower drum) so that the screw holes of both upper and lower drums match.

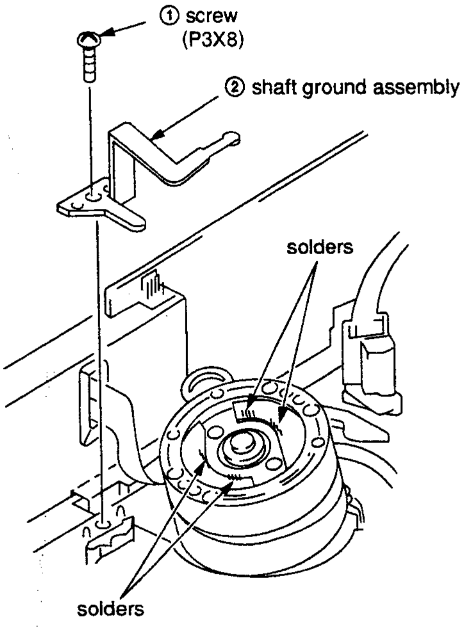

① screw (P3X8)
② shaft ground assembly
solders
solders

Fig. 2.

Note: When inserting the rotary upper drum assembly into the lower drum, be careful not to blur the contacting surface with fingerprint or like.

2) If it is difficult, mount the upper drum by shaking it gradually.
Note: Be careful not to damage the head.
Make sure that the upper drum is tightly inserted.
3) Tighten two screws ③ (PSW3×8).
Note: Temporary tighten two screws, after making sure that upper drum is tightly inserted, tighten the screws.

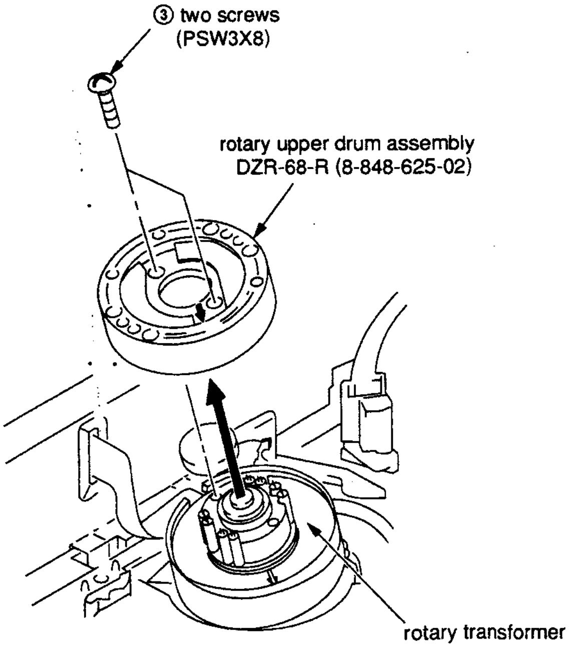

③ two screws (PSW3X8)
rotary upper drum assembly DZR-68-R (8-848-625-02)
rotary transformer board

Fig. 3.

4) Solder 16 points on the rotary upper drum board. (See Fig. 2.)
5) Fix the shaft ground assembly ② using the screw ① (P3×8) so that the protrusion of the shaft ground assembly end contacts the center of the drum shaft. (See Fig. 2.)
   Note: When attaching the shaft ground assembly, be careful not to apply force to the spring section of it.
6) Tighten the screw ① (P3×8).

3. PERIODIC CHECK AND REPLACEMENT

In order to obtain the best performance from this unit and make full use of it's capabilities, and to extend the life of the unit and tapes, it is recommended that the following periodic checks and maintenance be performed.

* The following must be done after every repair regardless of how many hours the user has operated the machine.

3-1. CLEANING OF ROTATING HEAD DISK ASSEMBLY

1) Press a chamois cloth (Jig Ref. No. J-9) which has been dipped in cleaning fludi (Jig Ref. No. J-8) lightly against the rotating drum assembly, then do the cleaning by slowly rotating the rotating head disk by hand. (Never try to clean by using the motor to turn it.)
2) Never try to clean by moving the chamois cloth at a vertical angle to the head tip. There is a very great danger of damaging the head tip if this is done.

3-2. CLEANING OF THE TAPE MOVEMENT SYSTEM

1) Clean the surfaces which the tape contacts during it's movement (tape guide, drum assembly surface, capstan, pinch roller, etc.) with a chamois cloth that has been dipped in cleaning fluid.

3-3. CLEANING THE DRIVE SYSTEM

1) Clean the driving parts with a cloth that been dipped in cleaning fluid.

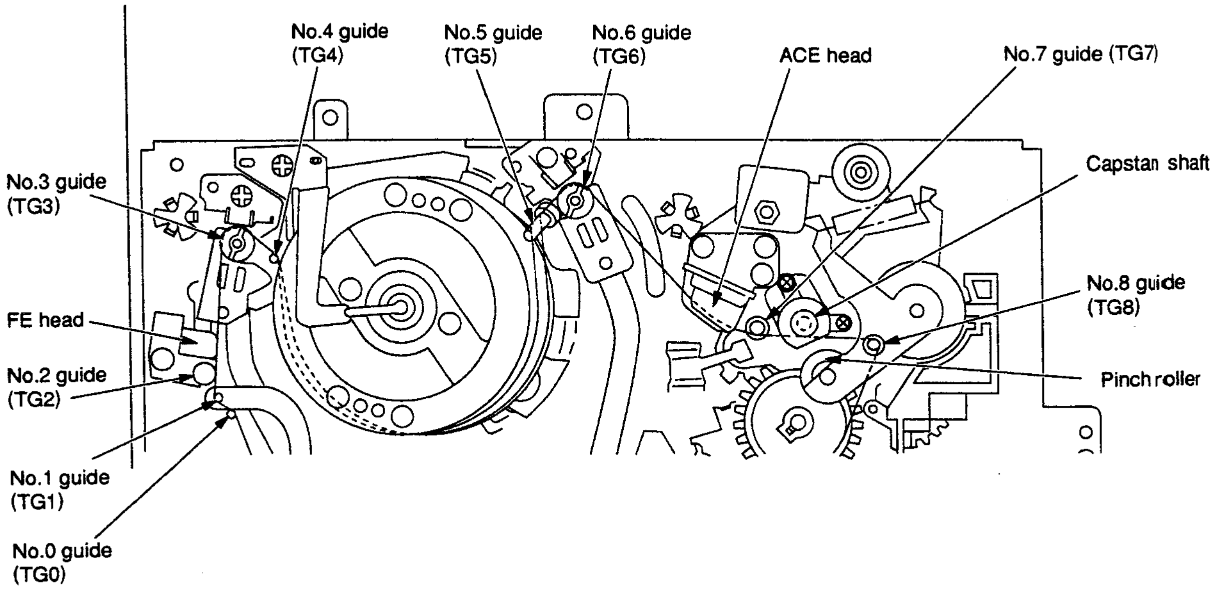


Fig. 4. Parts requiring cleaning

TYPES OF DIFFERENCES

	SLV-K872MN	SLV-K872PS	SLV-K862	SLV-KH3
GENERAL				
COLOR SYSTEM (PAL)	○	○	○	○
(SECAM)	×	×	×	×
(MESECAM)	○	○	○	○
(NTSC 3.58)	○	○	○	○
(NTSC 4.43)	○	○	○	○
(NTSC PB ON PALTV)	○	○	○	○
S-VHS/SQPB	×	×	×	×
HEAD/CH	4/6	4/6	4/6	4/6
F.E.HEAD	×	×	×	×
REC MODE (PAL/MESECAM)	SP/LP	SP/LP	SP/LP	SP/LP
(NTSC)	SP/EP	SP/EP	SP/EP	SP/EP
PB MODE (PAL/MESECAM)	SP/LP	SP/LP	SP/LP	SP/LP
(NTSC)	SP/LP/EP	SP/LP/EP	SP/LP/EP	SP/LP/EP
AUDIO SYSTEM	HiFi	HiFi	HiFi	HiFi
HiFi REC MODE (PAL/MESECAM)	SP/LP	SP/LP	SP/LP	SP/LP
(NTSC)	SP/EP	SP/EP	SP/EP	SP/EP
HiFi PB MODE (PAL/MESECAM)	SP/LP	SP/LP	SP/LP	SP/LP
(NTSC)	SP/LP/EP	SP/LP/EP	SP/LP/EP	SP/LP/EP
NTSC PB SW	○ 3posi	○ 3posi	○ 3posi	○ 3posi
SYSTEM SW (AUTO/PAL-MESECAM/NTSC)	○	○	○	○
TRICK MODE				
F R SEARCH	○	○	○	○
LOCKED SEARCH ※	○	○	○	○
CLEAN STILL	○	○	○	○
FRAME ADVANCE (FWD/RVS) ※	○	○	○	○
SLOW MOTION (FWD/RVS)	○	○	○	○
REVERSE PB	○	○	○	○
X2 SPEED (FWD/RVS)	○	○	○	○
JOG/SHUTTLE	D.M.S	D.M.S	D.M.S	D.M.S
REPLAY ※				×
TUNER/RFU				
TUNING SYSTEM	F.S.S	F.S.S	F.S.S	×
BROADCAST SYSTEM	BG/DK	BG/DK	BG/DK	×
VHF L/VHF H/VHF CATV	○/○/○	○/○/○	○/○/○	×
UHF	○	○	○	×
CATV (HYPER/OSCAR)	○/○	○/○	○/○	×
TUNER AUTO PRESET	○	○	○	×
CHANNEL SETTING	50posi	50posi	50posi	×
US STEREO (W/SAP)	×	×	×	×
NICAM	○	×	× (TUNER MONO)	×
ZWEITON	○	○	× (TUNER MONO)	×
RF MOD (SYSTEM)	G/K	G/K	G/K	G/K
RF MOD (FREQUENCY)	PLL	PLL	PLL	G: 30~39, K: 22~31
TEST SIG	×	×	×	×

※ Possible to operate if it's only RMT.

	SLV-K872MN	**SLV-K872PS**	**SLV-K862**	**SLV-KH3**
TIMER				
G–code	○	○	×	×
CABLE BOX CONTROL	×	×	×	×
CLOCK DISPLAY	24H	24H	24H	×
PROGRAM	1M/8E	1M/8E	1M/8E	×
QUICK TIMER	○	○	○	×
TIMER CHECK	○	○	○	×
POWER OFF TIMER REC	○	○	○	×
EVERY DAY/EVERY WEEK	○/○	○/○	○/○	×
SIMULCAST	×	×	×	×
BACK UP TIME	1H	1H	1H	×
JUST REC/CLOCK	×/×	×/×	×/×	×/×
VPS	×	×	×	×
VPT	×	×	×	×
EDS	×	×	×	×
PDC	×	×	×	×
REMOTE COMMANDER	RMT-V165	RMT-V165	RMT-V165A	RMT-V165C
VTR MODE	VTR3	VTR3	VTR3	VTR3
10KEY	○	○	○	○
UNI COMMANDER	○	○	○	○
G–code	○	○	×	×
TIMER SET	×	×	×	×
JOG SHUTTLE	D.M.S	D.M.S	D.M.S	D.M.S
LCD	×	×	×	×
KEY CONT (♯ , ♭)	○	○	○	○
KEY/VOICE SW	○	○	○	○
KARAOKE PROGRAM	○	○	○	○
EDIT FUNCTIONS				
AUDIO/VIDEO INSERT	○ (A-DUB)/ ×	○ (A-DUB)/ ×	○ (A-DUB)/ ×	○ (A-DUB)/ ×
RENTAL PICTURE	×	×	×	×
EDIT SWITCH	×	×	×	×
SYNCRO EDIT	×	×	×	×
SHUTTLE EDIT	○	○	○	○
CAM CONT/EDIT MONITOR	×	×	×	×
ON SCREEN DISPLAY				
DATA SCREEN	○	○	○	○
TAPE COUNTER	○	○	○	○
TAPE REMAIN	×	×	×	×
MESSAGE	○	○	○	○
DATE/TIME	×	×	×	×
MENU/AUTO MENU	○/×	○/×	○/×	○/×
LANGUAGE	CHINESE/ENGLISH	CHINESE/ENGLISH	CHINESE/ENGLISH	CHINESE/ENGLISH
OUTPUT COLOR SYSTEM	PAL	PAL	PAL	PAL
DISPLAY (FIP)				
LEVEL-METER	○	○	○	○
COUNTER	○	○	○	×
KEY/CONT (♭ 7~ ♯ 7, KEY/VOICE)	○	○	○	○
AMS/VISS (SCAN/SEARCH)	○/○(×/○)	○/○(×/○)	○/○(×/○)	○/○(×/○)

※ Possible to operate if it's only RMT.

	SLV-K872MN	SLV-K872PS	SLV-K862	SLV-KH3
OPERATION FUNCTION				
AUTO TRACKING	○	○	○	○
HEAD CLEANER (AUTO)	○	○	○	○
DIMMER	○	○	○	×
VISS (NEW-INDEX)/VASS	○/×	○/×	○/×	○/×
SHARPNESS	×	×	×	×
APC (OA)	○	○	○	○
DSF	×	×	×	×
CM SKIP (30 s SKIP) ※	○	○	○	×
ILLUMINATION GUIDE	○	○	○	×
INPUT SELECT	○	○	○	○
TAPE SPEED	○	○	○	○
RF CHANNEL SET	○	○	○	×
EASY SET UP	○	○	○	×
INPUTS/OUTPUTS				
REAR LINE IN	1	1	1	1
FRONT LINE IN	1	1	1	1
REAR LINE OUT	1	1	1	1
FRONT LINE OUT	×	×	×	1
EURO CONNECTOR	×	×	×	×
HEADPHONE JACK	×	×	×	×
CONTROL T/L/S	×/×/×	×/×/×	×/×/×	×/×/×
KARAOKE				
KARAOKE PROGRAM (MENU/DIRECT)	○	○	○	○
KEY CON/VOICE CHANGE	○	○	○	○
KARAOKE MODE (PON/ASSIST)	○	○	○	○
SURROUND (HALL/KARAOKE BAR)	○	○	○	○
SELF DUET	○	○	○	○
MIC 1, 2 INPUT JACK	2	2	2	2
MIC VOLUME	2	2	2	2
KARAOKE AFTER REC	○	○	○	○
LINE, TUNER KARAOKE	○	○	○	△ (Line only)
DIGITAL ECHO	○	○	○	○
ECHO LEVEL VOLUME	1	1	1	1
SCORE	○	○	○	○
DIMENSION, WEIGHT				
WIDTH (mm)	430	430	430	430
HEIGHT (mm)	103	103	103	103
DEPTH (mm)	323	323	323	313
WEIGHT (kg)	5.0	5.0	5.0	4.9
INSTRUCTION MANUAL				
ENGLISH	○	○	○	○
CHINESE	○	○	○	○
FRENCH	×	×	×	×
ALABIC	×	×	×	×
RUSSIAN	×	×	×	×
JAPANESE	×	×	×	×
PORTUGUESE	×	×	×	×
SPANISH	×	×	×	×

※ Possible to operate if it's only RMT.

	SLV-K872MN	SLV-K872PS	SLV-K862	SLV-KH3
POWER SUPLLY				
VOLTAGE	110~240V	110~240V	110~240V	110~240V
FREQUENCY	50/60Hz	50/60Hz	50/60Hz	50/60Hz
POWER CONSUMPTION	27W	27W	27W	21W
AC OUTLET	×	×	×	×
ACCESSORIES				
RMT	○	○	○	○
INSTRUCTION MANUAL	○	○	○	○
BATTERY R6×2pcs	○	○	○	○
MICROPHONE	○	○	○	○
MAINS LEAD	○	○	○	○
AERIAL CABLE (RF)	○	○	○	○
AV CABLE (3P)	○	○	○	○

※ Possible to operate if it's only RMT.

SLV-K862CH/K862PS/K872MN/K872PS/KH3CH/KH3ME/KH3PS

SECTION 1
GENERAL

This section is extracted from SLV-K862PS/K872MN/K872PS instruction manual.

SLV-K862CH/K862PS/K872MN/K872PS MODELS

Welcome!

Thank you for purchasing the Sony Video Cassette Recorder (VCR). Here are some of the features you'll enjoy with your VCR:

- Karaoke function which lets you sing to the tunes of your favourite songs
- EASY SET UP that guides you through necessary VCR setups sequentially through the TV screen
- Adaptive Picture Control (APC) that automatically optimises recording and playback performance
- Dual Mode Shuttle (DMS) ring for easy playback and search operations
- G-CODE* system that lets you quickly and easily preset the VCR to record programmes *(SLV-K872MN/K872PS only)*

* G-CODE is a trademark applied for by Gemstar Development Corp. G-CODE system is manufactured under licence from Gemstar Development Corporation.

Compatible colour systems

- This VCR is designed to record and play back using the PAL, MESECAM (systems B/G and D/K), or NTSC colour systems. Recording of video sources based on other colour systems cannot be guaranteed.

Checking your model name

The instructions in this manual are for the SLV-K872MN, SLV-K872PS and SLV-K862PS. Check your model number by looking at the rear panel of your VCR. SLV-K872MN is used for the illustrations purposes. Any difference in operation is clearly indicated in the text, for example, *"SLV-K872MN only."*

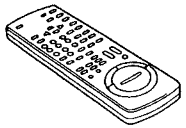
Types of differences

Feature \ Model	K872MN	K872PS	K862PS
NICAM	•	–	–
ZWEITON	•	•	–
G-CODE	•	•	–

Step 1 Unpacking

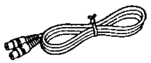
Check that you have the following items:

- **Remote commander**



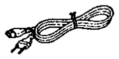
- **R6 (size AA) batteries**

- **Aerial cable**

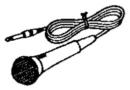


- **Audio/video cable**

- **Mains lead**

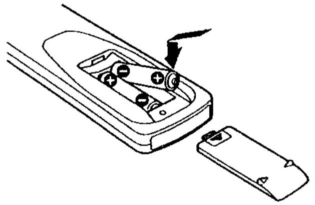


- **Microphone**



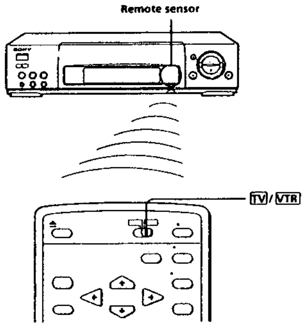
Step 2 Setting up the remote commander

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your TV.

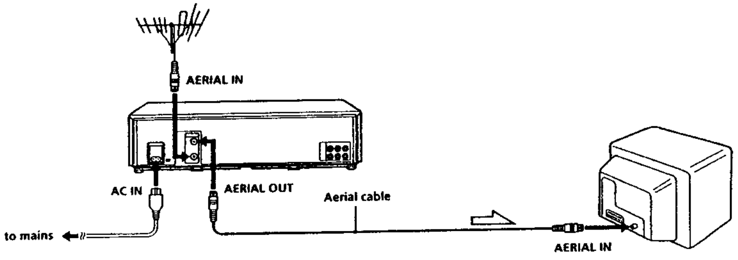


To operate	Set TV / VTR to
the VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Notes

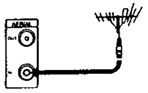
- With normal use, the batteries should last for approximately three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

Step 3 Connecting the VCR

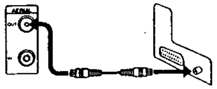


⇨ : Signal flow

1 **Disconnect the aerial input cable from your TV and connect it to AERIAL IN of the VCR.**

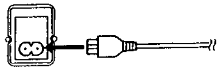


2 **Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.**



3 **Connect AC IN of the VCR and the mains supply using the mains lead.**

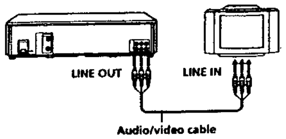
You've completed the basic hookup to watch and record TV programmes.



Additional connections

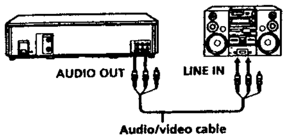
To a TV that has audio/video input jacks

This additional connection can improve picture and sound quality. Connect to the TV as shown on the right.



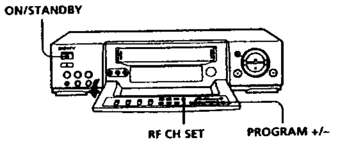
To a stereo system

You can improve sound quality by connecting to a stereo system as shown on the right.



Step 4 Tuning the TV to your VCR

If you have connected the VCR to your TV using the audio/video cable, skip this step.



1 ON/STANDBY

Press ON/STANDBY to turn on the VCR.

2 RF CH SET

Press RF CH SET on the VCR.
The factory-preset RF channel appears in the display window.
The VCR signal is output through this channel to the TV.

3

Turn on your TV and select a programme position for video playback.

4 RF CH SET

Press RF CH SET.
The TV system indicator appears in the display window.
Press PROGRAM +/– to select the desired TV system. If you watch the system B/G, select "G." If you watch the system D/K, select "K."

Tune the TV to the same channel as that shown in the display window so that a grey screen appears on the TV screen.
Refer to your TV manual for tuning instructions.
If the grey screen does not appear clearly, see "To obtain a clear grey screen" below.

5 RF CH SET

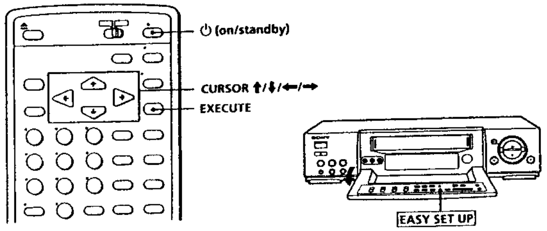
Press RF CH SET.
You have now tuned your TV to the VCR. Whenever you play a tape, set the TV to the programme position selected in step **3** above.

To check to see if the TV tuning is correct
Select the programme position for video playback on the TV and press PROGRAM +/–. If the TV screen changes to a different programme each time you press PROGRAM +/–, the TV tuning is correct.

To obtain a clear grey screen
If the grey screen does not appear clearly in step **4** above, press PROGRAM +/– in step **4**, while the RF channel is displayed, so that another RF channel appears. Then tune the TV to the new RF channel until a clear grey screen appears.

Step 5 Setting up the VCR sequentially (EASY SET UP)

Before using the VCR for the first time, set up the VCR using the EASY SET UP function. With this function, you can set TV channels and the clock guided by the sequence indicated on the TV screen.



1 ⏻

Press ⏻ (on/standby) to turn on the VCR.

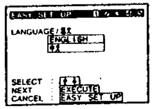
2

Turn on your TV, and select a programme position for video playback.

3 EASY SET UP

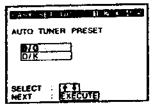
Press EASY SET UP on the VCR.
The language select menu appears on the TV screen.

To cancel starting the EASY SET UP function, press EASY SET UP.


EASY SET UP
LANGUAGE/[illegible]
ENGLISH
[illegible]
SELECT : ↑ ↓
NEXT : EXECUTE
CANCEL : EASY SET UP

4 CURSOR EXECUTE

Press CURSOR ↑/↓ to highlight the desired on screen display language, then press EXECUTE.
The AUTO TUNER PRESET menu appears on the TV screen.


EASY SET UP
AUTO TUNER PRESET
B/G
D/K
SELECT : ↑ ↓
NEXT : EXECUTE

(continued)

5 CURSOR

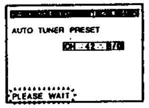
Press CURSOR ↑/↓ to highlight the desired system, then press EXECUTE.
The VCR starts searching for all the receivable channels in your area and presets the located channels in numerical order.

EXECUTE

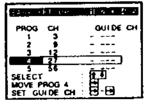
When all the channels are preset, the following screen appears.

If necessary, you can add or disable the channels manually. See "Tuning the VCR to TV channels manually" on page **13**.

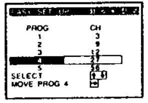
Note
Do not exit EASY SET UP function while AUTO TUNER PRESET is presetting channels. If you do so, repeat EASY SET UP operation from the beginning.


AUTO TUNER PRESET
CH 42
PLEASE WAIT

(SLV-K872MN/K872PS)


PROG CH GUIDE CH
1 3
2 9
3 12
4 27
5 56
SELECT : ↑↓
MOVE PROG 4 : →
SET GUIDE CH : ← - →

(SLV-K862PS)

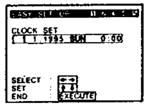

PROG CH
1 3
2 9
3 12
4 27
5 56
SELECT : ↑↓
MOVE PROG 4 : →

6 CURSOR

Using CURSOR ↑/↓/←/→, set the G-CODE guide channels*(SLV-K872MN/K872PS only)*, and change the programme positions of the stations.
If not necessary, skip this step.
The setting procedures are the same as those described in "Setting up G-CODE manually" on page **16** and "Changing the programme positions of the stations" on page **18**.

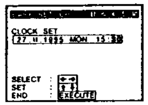
7 EXECUTE

Press EXECUTE.
The CLOCK SET menu appears.


EASY SET UP
CLOCK SET
1 1 1995 SUN 0:00
SELECT : ←→
SET : ↑↓
END : EXECUTE

8 CURSOR

Using CURSOR ↑/↓/←/→, set the date and clock manually.
The setting procedures are the same as described in "Setting the clock" on page **11**.


CLOCK SET
27 II 1995 MON 15:30
SELECT : ←→
SET : ↑↓
END : EXECUTE

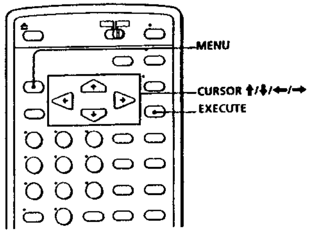
9 EXECUTE

Press EXECUTE to finish the EASY SET UP operation.

1-4

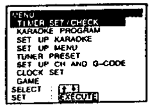
Step 6 Setting the clock

You must set the time and date on the VCR to be able to use the timer recording features properly. You can set the VCR clock using the menu. To set the clock, you may use the clock in the VCR window display which you have set in the EASY SET UP procedure.


MENU
CURSOR ↑/↓/←/→
EXECUTE

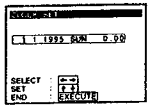
1 MENU

Press MENU.
The main MENU appears on the TV screen.


MENU
TIMER SET/CHECK
KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
TUNER PRESET
SET UP CH AND G-CODE
CLOCK SET
GAME
SELECT : ↑↓
SET : EXECUTE

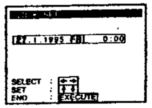
2 CURSOR EXECUTE

Press CURSOR ↑/↓ to move the cursor (▮) to CLOCK SET, then press EXECUTE.
The CLOCK SET menu appears.


CLOCK SET
1 1 1995 SUN 0.00
SELECT : ←→
SET : ↑↓
END : EXECUTE

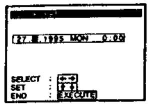
3 CURSOR

Press CURSOR ↑/↓ to set the day.
The day of the week is set automatically.


27.1.1995 FRI 0:00
SELECT : ←→
SET : ↑↓
END : EXECUTE

4 CURSOR

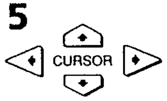
Press CURSOR → to highlight the month and set the month using CURSOR ↑/↓.


27.II.1995 MON 0:00
SELECT : ←→
SET : ↑↓
END : EXECUTE

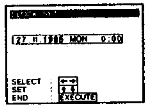
(continued)

Step 6 Setting the clock (continued)

5

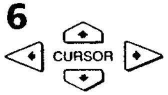


Press CURSOR ➞ to highlight the year and set the year using CURSOR ↑/↓.

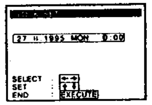


```
27.11.1995 MON     0:00
SELECT : ←→
SET    : ↑↓
END    : EXECUTE
```

6

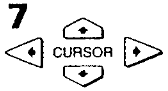


Press CURSOR ➞ to highlight the hours and set the hours using CURSOR ↑/↓.

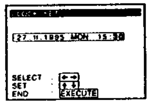


```
27.11.1995 MON     0:00
SELECT : ←→
SET    : ↑↓
END    : EXECUTE
```

7



Press CURSOR ➞ to highlight the minutes and set the minutes using CURSOR ↑/↓.



```
27.11.1995 MON    15:30
SELECT : ←→
SET    : ↑↓
END    : EXECUTE
```

8

Press EXECUTE to start the clock.

Note

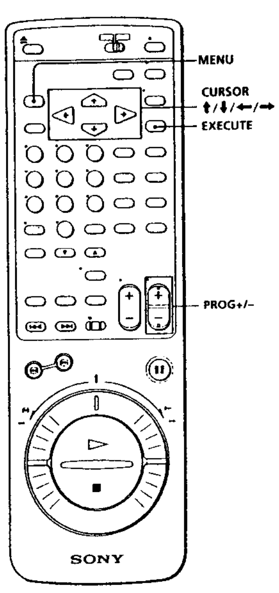
- The menu disappears automatically if you don't proceed for more than a few minutes.

Tip

- To change the digits during setting, press CURSOR ← to return to the item to be changed, and select the digits using CURSOR ↑/↓.

Tuning the VCR to TV channels manually

You may have preset the receivable channels in your area in the EASY SET UP procedure (page 9). If some channels could not be preset automatically, you can preset them manually; if there are unwanted channels among the preset ones, you can disable the channels.

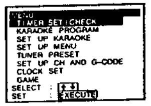


Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

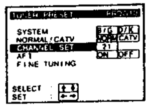
Presetting channels manually

1 Press MENU.
The main MENU appears on the TV screen.



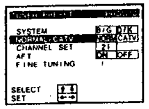
```
MENU
 TIMER SET/CHECK
 KARAOKE PROGRAM
 SET UP KARAOKE
 SET UP MENU
 TUNER PRESET
 SET UP CH AND G-CODE
 CLOCK SET
 GAME
SELECT : ↑↓
SET    : EXECUTE
```

2 Press CURSOR ↑/↓ to move the cursor (▮) to TUNER PRESET, then press EXECUTE.
The TUNER PRESET menu appears.



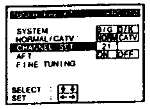
```
 SYSTEM          B/G  D/K
 NORMAL/CATV     NORM CATV
 CHANNEL SET      21
 AFT             ON   OFF
 FINE TUNING
SELECT : ↑↓
SET    : ←→
```

3 Press CURSOR ↑/↓/←/➞ to move the cursor (▮) to NORMAL/CATV, then highlight NORM.
To preset CATV channels, highlight CATV.



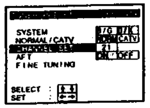
```
 SYSTEM          B/G  D/K
 NORMAL/CATV     NORM CATV
 CHANNEL SET      21
 AFT             ON   OFF
 FINE TUNING
SELECT : ↑↓
SET    : ←→
```

4 Press CURSOR ↑/↓ to move the cursor (▮) to CHANNEL SET.



```
 SYSTEM          B/G  D/K
 NORMAL/CATV     NORM CATV
 CHANNEL SET      21
 AFT             ON   OFF
 FINE TUNING
SELECT : ↑↓
SET    : ←→
```

5 Press PROG +/– to select the programme position.

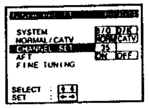


```
 SYSTEM          B/G  D/K
 NORMAL/CATV     NORM CATV
 CHANNEL SET      21
 AFT             ON   OFF
 FINE TUNING
SELECT : ↑↓
SET    : ←→
```

(continued)

Tuning the VCR to TV channels manually (continued)

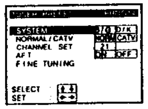
6 Press CURSOR ➡ to start tuning.
The VCR starts searching for a channel and displays the first one it finds on the TV screen. Press CURSOR ⬅/➡ repeatedly until the channel you want is displayed.
The channels are scanned in the following order:


SYSTEM
B/G D/K
NORMAL/CATV
NORM CATV
CHANNEL SET
15
AFT
ON OFF
FINE TUNING
SELECT :
SET :

D/K TV system		B/G TV system	
Channel number in the CHANNEL SET field	CHANNEL	Channel number in the CHANNEL SET field	CHANNEL
2	R1	1	NZ1
5	R6	2	E2
6	R7	3	E3
12	R12	4	E4
13	R2	5	E5
14	R3	6	E6
15	R4	7	E7
16	R5	8	E8
17	R8	9	E9
18	R9	10	E10
19	R10	11	E11
20	R11	12	E12
21-69	R21-R69	21-69	E21-E69
		CATV 1-41	S1-S41
		CATV 42-46	S01-S05

If you know the number of the channel you want, press the programme number buttons. For example, for channel 5, first press "0" and then press "5."

7 If the TV sound is distorted or noisy, press CURSOR ⬆/⬇/⬅/➡ to move the cursor (▮) to SYSTEM, then highlight either B/G or D/K whichever is applicable in your area.


SYSTEM
B/G D/K
NORMAL/CATV
NORM CATV
CHANNEL SET
21
AFT
ON OFF
FINE TUNING
SELECT
SET

8 To allocate another channel to another programme position, repeat steps **5** and **6**.

9 Press EXECUTE to store all the allocated channels.

Disabling unwanted programme positions

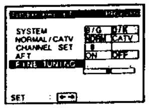
After tuning the TV channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/– buttons.

1 Press MENU, then select TUNER PRESET and press EXECUTE.
2 Select CHANNEL SET.
3 Press PROG +/– until the programme position you want to disable appears beside "PROG" on the TV screen.
4 Press programme number button "0" twice to display the number "0" beside CHANNEL SET.
5 Repeat steps **3** and **4** for other positions you want to disable.
6 Press EXECUTE.

If the picture is not clear

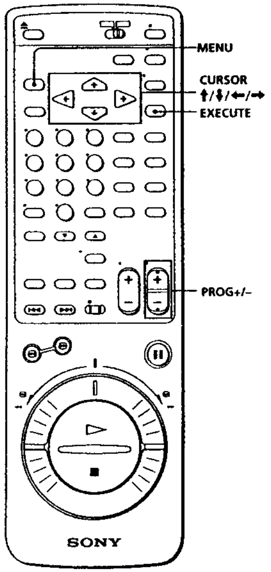
Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

1 Press PROG +/– to select the programme number for which you cannot obtain a clear picture.
2 Press MENU, then select TUNER PRESET and press EXECUTE.
3 Select FINE TUNING. The fine tuning meter appears.


SYSTEM
B/G D/K
NORMAL/CATV
NORM CATV
CHANNEL SET
AFT
ON OFF
FINE TUNING
SET :

4 Press CURSOR ⬅/➡ to get a clearer picture, then press EXECUTE. Note that the AFT (Auto Fine Tuning) setting switches to OFF.

Setting up G-CODE manually *(SLV-K872MN/K872PS only)*


MENU
CURSOR ↑/↓/←/→
EXECUTE
PROG+/–
SONY

1-7

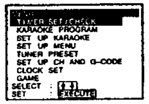
Note

- The menu disappears automatically if you don't proceed for more than a few minutes.

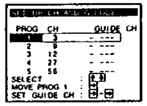
G-CODE is a feature in Sony VCRs that simplifies the task of programming the VCR to make timer recordings. Use the on-screen display to coordinate the programme position of each channel with the guide channel (the number that's assigned to each TV station in advance). To get the guide channel numbers, look in the programme guide for your area that features G-CODE numbers.

Setting the guide channels

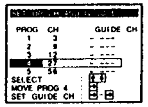
1 Press MENU.
The main MENU appears on the TV screen.


TIMER SET/CHECK
KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
TUNER PRESET
SET UP CH AND G-CODE
CLOCK SET
GAME
SELECT : ↑↓
SET : EXECUTE

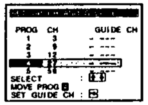
2 Press CURSOR ↑/↓ to move the cursor (▮) to SET UP CH AND G-CODE, then press EXECUTE.
The SET UP CH AND G-CODE menu appears.
The preset channels are displayed on the screen. "---" in the GUIDE CH column means that the guide channel has not been preset.


PROG CH GUIDE CH
1 3 - ---
2 9 - ---
3 12 - ---
4 27 - ---
5 56 - ---
SELECT : ↑↓
MOVE PROG 1 :
SET GUIDE CH :

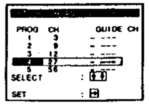
3 Press CURSOR ↑/↓ to move the cursor (▮) to the row on which you want to set the guide channel.
To display other pages for programme positions 6 to 50, press CURSOR ↑/↓ repeatedly.


PROG CH GUIDE CH
1 3 - ---
2 9 - ---
3 12 - ---
4 27 - ---
5 56
SELECT
MOVE PROG 4
SET GUIDE CH

4 Press CURSOR → to highlight the TV channel and guide channel.


PROG CH GUIDE CH
1 3 - ---
2 9 - ---
3 12 - ---
4 27 - ---
5 56
SELECT
MOVE PROG
SET GUIDE CH

5 Press CURSOR → to highlight the guide channel only.

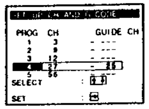

PROG CH GUIDE CH
1 3 - ---
2 9 - ---
3 12 - ---
4 27 - ---
5 56
SELECT
SET

(continued)

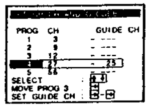
Notes

- If you inadvertently entered a guide channel number, press CURSOR ↑/↓ repeatedly to reset the "GUIDE CH" column to "—". "—" appears between 1 and 255.
- The VCR does not allow entering the guide channel number, if the same number has been set.
- If you leave the GUIDE CH column blank (—), the VCR will record the signal through LINE IN.

6 Press CURSOR ↑/↓ to select the guide channel number assigned in the programme guide.


PROG CH GUIDE CH
1 3 - ---
2 9 - ---
3 12 - ---
4 27
5 56
SELECT
SET

7 Press CURSOR → to confirm the setting.
The cursor (▮) appears in the leftmost column.


PROG CH GUIDE CH
1 3 - ---
2 9 - ---
3 12 - ---
4 27
5 56
SELECT
MOVE PROG 3
SET GUIDE CH

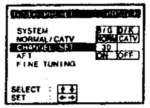
8 To set the guide channel of another station, repeat steps **3** to **7**.
If you want to change the programme positions of the stations, proceed to step **2** of "Changing the programme positions of the stations" on page **18**.

9 When you've finished, press EXECUTE to exit.

Setting up G-CODE for satellite broadcasts

When your satellite tuner is connected via the AERIAL IN connector, first you have to set the programme position for each satellite channel using the TUNER PRESET menu. Then set the guide channel number for each satellite channel using the SET UP CH AND G-CODE menu.

1 Turn on the satellite tuner.
2 Press MENU, then select TUNER PRESET and press EXECUTE.
3 Press PROG +/– to select a programme position you want to use for watching a satellite channel.
4 Select CHANNEL SET, then press CURSOR → to tune the VCR to the satellite tuner.
The channel number displayed beside CHANNEL SET is used for receiving all satellite broadcasts from the satellite tuner.

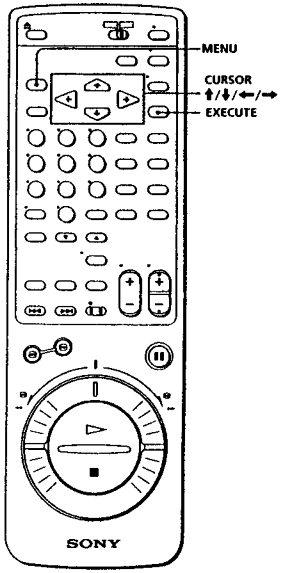

SYSTEM
B/G D/K
NORMAL/CATV
NORM CATV
CHANNEL SET
30
AFT
ON OFF
FINE TUNING
SELECT : ↑↓
SET : ←→

5 Press PROG +/– to select another programme position for another satellite channel, and press the programme number buttons to enter the same channel number as the one displayed in step **4**.
Repeat this step for all satellite channels.
6 Set the guide channel number for each programme position assigned to the satellite channel, following the procedures in "Setting the guide channels" on pages **16** and **17**.

Note

- When you record a satellite broadcast using G-CODE, you need to select the desired channel on the satellite tuner manually.

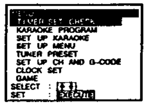
Changing the programme positions of the stations


MENU
CURSOR
↑/↓/←/→
EXECUTE
SONY

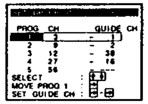
After setting the channels and G-CODE guide channels *(SLV-K872MN/K872PS only)*, you can change the programme positions which are automatically assigned, as you like.

For SLV-K872MN/K872PS

1 Press MENU.
The main MENU appears on the TV screen.


TIMER SET CHECK
KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
TUNER PRESET
SET UP CH AND G-CODE
CLOCK SET
GAME
SELECT : ↑↓
SET : EXECUTE

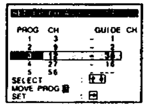
2 Press CURSOR ↑/↓ to move the cursor (▮) to SET UP CH AND G-CODE, then press EXECUTE.
The SET UP CH AND G-CODE menu appears.



PROG	CH		GUIDE CH
1	3	-	1
2	9	-	2
3	12	-	38
4	27	-	16
5	56	-	---

SELECT : ↑↓
MOVE PROG 1 : →
SET GUIDE CH : ←-→

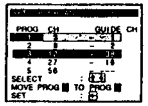
3 Press CURSOR ↑/↓ to move the cursor (▮) to the row on which you want to change the programme position, then press CURSOR →.
The TV channel and guide channel are highlighted.
To display other pages for programme positions 6 to 50, press CURSOR ↑/↓ repeatedly.



PROG	CH		GUIDE CH
1	3	-	1
2	9	-	2
3	12	-	38
4	27	-	16
5	56	-	---

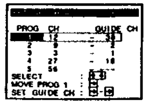
SELECT : ↑↓
MOVE PROG ▮
SET : ←

4 Press CURSOR ↑/↓ until the channel and guide channel row moves to the desired programme position, then press CURSOR ←.
The two rows exchange the positions.



PROG	CH		GUIDE CH
1	3	-	1
2	9	-	2
3	12	-	38
4	27	-	16
5	56	-	---

SELECT : ↑↓
MOVE PROG ▮ TO PROG ▮
SET : ←

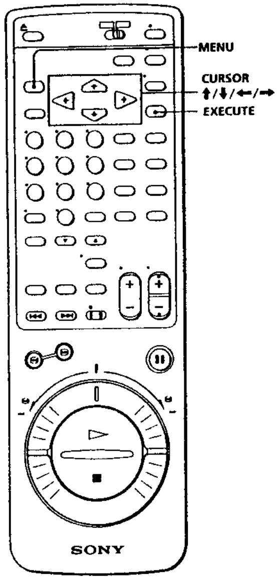


PROG	CH		GUIDE CH
1	12	-	38
2	9	-	2
3	3	-	1
4	27	-	16
5	56	-	---

SELECT : ↑↓
MOVE PROG 1 : →
SET GUIDE CH : ←-→

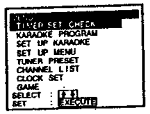
5 To change the programme position of another station, repeat steps **3** and **4**.

6 When you've finished, press EXECUTE to exit.

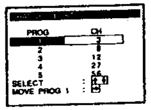

MENU
CURSOR
↑/↓/←/→
EXECUTE
SONY

For SLV-K862PS

1 Press MENU.
The main MENU appears on the TV screen.


TIMER SET CHECK
KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
TUNER PRESET
CHANNEL LIST
CLOCK SET
GAME
SELECT : ↑↓
SET : EXECUTE

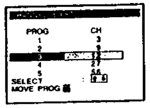
2 Press CURSOR ↑/↓ to move the cursor (▮) to CHANNEL LIST, then press EXECUTE.
The CHANNEL LIST menu appears.



PROG	CH
1	3
2	9
3	12
4	27
5	56

SELECT : ↑↓
MOVE PROG 1 : →

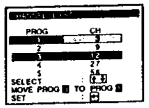
3 Press CURSOR ↑/↓ to move the cursor (▮) to the row on which you want to change the programme position, then press CURSOR →.
The TV channel is highlighted.
To display other pages for programme positions 6 to 50, press CURSOR ↑/↓ repeatedly.



PROG	CH
1	3
2	9
3	12
4	27
5	56

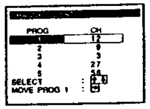
SELECT : ↑↓
MOVE PROG ▮

4 Press CURSOR ↑/↓ until the channel row moves to the desired programme position, then press CURSOR ←.
The two rows exchange the positions.



PROG	CH
1	3
2	9
3	12
4	27
5	56

SELECT : ↑↓
MOVE PROG ▮ TO PROG ▮
SET : ←



PROG	CH
1	12
2	9
3	3
4	27
5	56

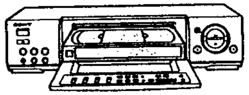
SELECT : ↑↓
MOVE PROG 1 : →

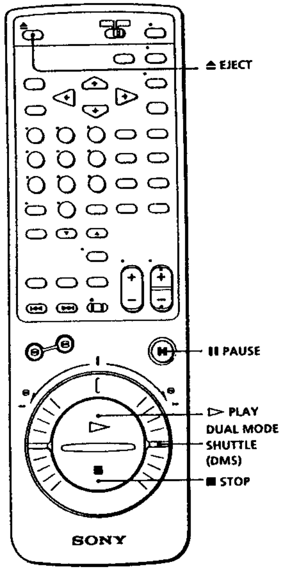
5 To change the programme position of another station, repeat steps **3** and **4**.

6 When you've finished, press EXECUTE to exit.

Basic Operations

Playing a tape





Tip

- For further information on searching and playback functions, see "Playing/ searching at various speeds" on page 34.

Note

- Tapes recorded in LP mode can be played back on this VCR, while playback picture quality in modes other than normal forward speed is not guaranteed.

This section shows you how to play back a video tape.

1 Turn on your TV and tune in to the VCR:
- If the TV is connected to the VCR using the audio/video cable, set the TV to video input.
- If the TV is connected to the VCR using only the aerial cable, set the TV to the programme position for the VCR.

2 Open the drop down panel and insert a tape.
The VCR turns on automatically. The tape starts playing automatically if its safety tab has been removed. (See page 27.)

3 Press ▷ PLAY to start playing.
When the tape reaches the end, the VCR automatically rewinds it to the beginning. (The power remains on.)

Additional tasks

To	Press
Stop play	■ STOP
Pause play	II PAUSE
Resume play after pause	II PAUSE or ▷ PLAY
Search forward	Turn the DUAL MODE SHUTTLE (DMS) ring to ⊕ during playback
Search backward	Turn the DMS ring to ⊖ during playback
Fast-forward the tape	Turn the DMS ring to ▶▶ FF during stop
Rewind the tape	Turn the DMS ring to ◀◀ REW during stop
Eject the tape	≜ EJECT

To set the colour system

If streaks appear during playback, set the COLOR SYSTEM switch on the VCR to conform to the system that the tape was recorded in. (The normal setting is AUTO.)

When your tape was recorded in	Set COLOR SYSTEM to
PAL	PAL/MESECAM
NTSC	NTSC
MESECAM	PAL/MESECAM

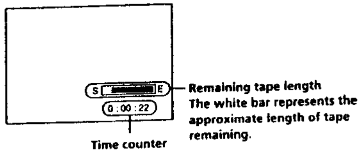
To play an NTSC-recorded tape

Set the NTSC PB switch at the rear of the VCR according to the colour system of your TV.

When your TV is	Set NTSC PB to
PAL	ON PAL TV
NTSC 4.43	NTSC 4.43
NTSC 3.58	NTSC 3.58

Displaying the remaining tape length and time counter

Press DISPLAY to turn the display on or off.


S
E
0:00:22
Remaining tape length
The white bar represents the approximate length of tape remaining.
Time counter

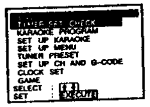
Using the time counter

At the point on a tape that you want to find later, press COUNTER RESET to reset the counter to "0H00M00S." When you rewind or advance the tape to this point, refer to the counter.

Recording stereo and bilingual programmes in NICAM system (*SLV-K872MN only*)

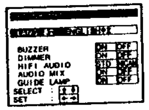
This VCR receives and records stereo and bilingual programmes based on the NICAM system. When NICAM broadcasts are received, the NICAM indicator appears in the display window; when stereo programmes are received, the STEREO indicator appears in the display window; when bilingual programmes are received, the L indicator lights up in the display window.

1 Press MENU.
The main MENU appears on the TV screen.



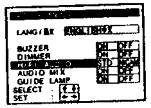
TIMER SET CHECK
KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
TUNER PRESET
SET UP CH AND G-CODE
CLOCK SET
GAME
SELECT : ⬆⬇
SET : EXECUTE

2 Press CURSOR ⬆/⬇ to move the cursor (▮) to SET UP MENU, then press EXECUTE.
The SET UP MENU appears.



LANG/BE ENGLISH
BUZZER ON OFF
DIMMER ON OFF
HIFI AUDIO STD NICAM
AUDIO MIX ON OFF
GUIDE LAMP ON OFF
SELECT : ⬆⬇
SET : ⬅➡

3 Press CURSOR ⬆/⬇/⬅/➡ to move the cursor (▮) to HIFI AUDIO, then highlight NICAM.



LANG/BE ENGLISH
BUZZER ON OFF
DIMMER ON OFF
HIFI AUDIO STD NICAM
AUDIO MIX ON OFF
GUIDE LAMP ON OFF
SELECT : ⬆⬇
SET : ⬅➡

4 Press EXECUTE to store the setting.

Using the NICAM setting, NICAM broadcasts are recorded as in the following table.

Track	Sound recorded	
	Stereo	**Bilingual**
Hi-fi audio Left channel	Left channel	Main
Hi-fi audio Right channel	Right channel	Sub
Normal audio (monaural)	Standard (usually the mixed sound of left and right channels)	Standard (usually the main sound)

Tip
- When you set HIFI AUDIO to NICAM, the stereo or bilingual sound is recorded on the hi-fi audio track and the standard sound is recorded on the normal audio track.

Recording stereo and bilingual programmes in ZWEITON (German stereo) system (*SLV-K872MN/ SLV-K872PS only*)

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system only when the SYSTEM (B/G or D/K) option in the TUNER PRESET menu is set to B/G. When stereo programmes are received, the STEREO indicator appears in the display window; when bilingual programmes are received, the MAIN/L indicator appears in the display window.

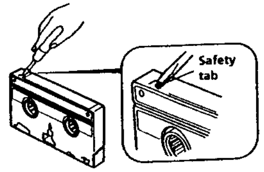
To monitor bilingual programmes while recording
Press AUDIO MONITOR to select the desired sound.

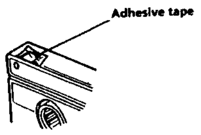
To listen to	Press AUDIO MONITOR until	
	The TV screen shows	**The display window shows**
Main sound	"MAIN"	"MAIN/L"
Sub sound	"SUB"	"SUB/R"
Main and sub sounds	"MAIN/SUB"	"MAIN/L, SUB/R"

Saving a recording

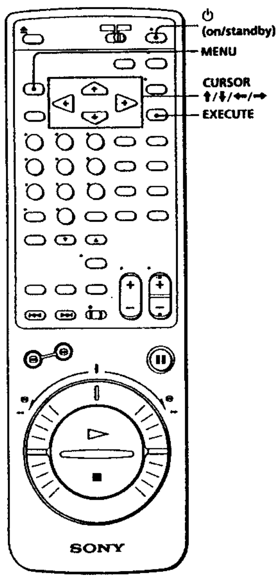
Video tapes have a safety tab to protect against accidental recording. To prevent accidental erasure of a recording, break off the safety tab with a screwdriver or other tool. A tape with its safety tab removed is ejected if you try to record on it.

To record on a tape with its safety tab removed, cover the tab hole with adhesive tape.





Recording TV programmes using the timer

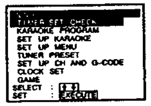

⏻ (on/standby)
MENU
CURSOR ↑/↓/←/→
EXECUTE
SONY

This section shows you how to let the VCR automatically start and stop recording TV programmes. You can preset up to eight programmes within a one month time frame.

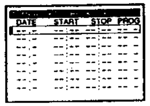
Before you start...

- Check that the VCR's clock is set correctly.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and tune in to the VCR.

1 **Press MENU.**

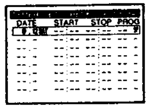

TIMER SET/CHECK
KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
TUNER PRESET
SET UP CH AND G-CODE
CLOCK SET
GAME
SELECT : ↑ ↓
SET : EXECUTE

2 **Press CURSOR ↑/↓ to move the cursor (▮) to TIMER SET/CHECK, then press EXECUTE.**
The TIMER SET/CHECK menu appears.
If the clock needs to be set, "PLEASE SET THE CLOCK" appears on the screen and the VCR automatically enters the clock setting mode.

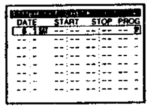

DATE START STOP PROG

3 **Set the date to start recording.**

1 Press CURSOR → to highlight the date.
Make sure today's date is displayed. If it isn't, adjust the clock.

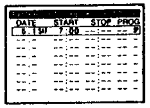

DATE START STOP PROG

2 Press CURSOR ↑/↓ to set the date.
The day of the week is set automatically.

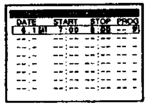

DATE START STOP PROG

4 **Set the time to start recording.**

1 Press CURSOR → to highlight the hour under "START," then press CURSOR ↑/↓ to set the hour.
2 Press CURSOR → to highlight the minutes under "START," then press CURSOR ↑/↓ to set the minutes.


DATE START STOP PROG

5 **Press CURSOR →, then set the time to stop recording in the same way.**


DATE START STOP PROG

Tip

- To set the programme position, you can also use the PROG +/– or programme number buttons.

Tip

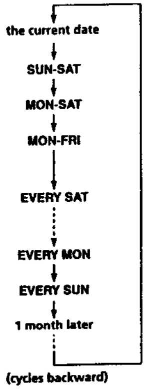
- To set the recording tape speed, you can also use TAPE SPEED.
- To record NTSC signals in EP mode, set the tape speed to LP.

Tip

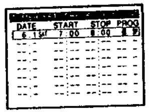
- To change the digits during setting, press CURSOR ← to return to the item to be changed, and select the digits using CURSOR ↑/↓.

Note

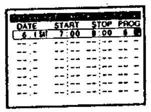
- If the power is interrupted for more than one hour while the VCR is standing by for recording, the timer settings are cleared. Reset the timer.


the current date
SUN-SAT
MON-SAT
MON-FRI
EVERY SAT
EVERY MON
EVERY SUN
1 month later
(cycles backward)

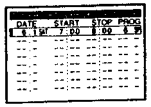
6 **Press CURSOR →, then select the programme position by pressing CURSOR ↑/↓.**


DATE START STOP PROG

7 **Press CURSOR →, then select the tape speed, SP or LP, by pressing CURSOR ↑/↓.**
See "To select tape speeds" on page **24**.


DATE START STOP PROG

8 **To confirm your programme, press CURSOR →.**
The cursor (▮) appears in the leftmost column.
To preset another timer setting, move the cursor to the next line using CURSOR ↓, and repeat steps **3** to **8**.


DATE START STOP PROG

9 **After making the desired timer settings, press EXECUTE.**

10 **Press ⏻ (on/standby) to turn off the VCR.**
The TIMER indicator on the VCR lights up.
The VCR turns off automatically and enters timer recording standby mode.
The VCR automatically turns on and starts recording at the preset start time, and turns off at the preset stop time.

To stop recording
To stop while the VCR is recording a programme, press ■ STOP.

Daily/weekly recording

Daily recording records the same programme every day of the week; weekly recording records the same programme on the same day, every week.

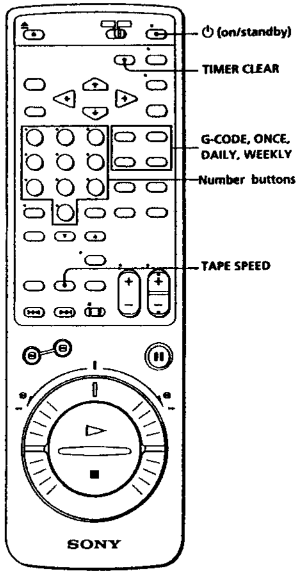
When you set the date to start recording in step **3** above, press CURSOR ↓ until the desired day appears. Each time you press the button, the indication changes as shown on the left.

Recording TV programmes using G-CODE *(SLV-K872MN/ SLV-K872PS only)*

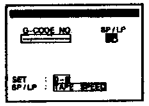
The G-CODE feature of this VCR simplifies the task of making timer recordings. Using G-CODE, you can make all the necessary settings by just entering the desired programme's 9-digit code, which is available in your local programme guide. To take advantage of this feature, you must first set up your VCR and assign programme positions to the various guide channels. For details, see "Setting up G-CODE manually" on page **16**.

Before you start...

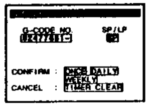
- Check that the clock is set correctly.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and tune in to the VCR.



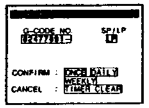
1 **Press G-CODE.**
The G-CODE menu appears on the TV screen.
If the clock needs to be set, "PLEASE SET THE CLOCK" appears on the screen and the VCR automatically enters the clock setting mode.



2 **Use the number buttons to enter the desired programme's G-CODE number.**
If you make a mistake, press TIMER CLEAR and enter the correct number.



3 **Select the tape speed, SP or LP, by pressing TAPE SPEED.**



Tip

- To exit from the G-CODE mode, press G-CODE before pressing ONCE, DAILY or WEEKLY in step **4**.

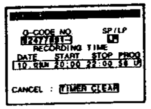
Notes

- You cannot set G-CODE in the following cases:
  - When the VCR is turned off.
  - While recording using the timer or quick timer.
- The timer will not accept settings in the following cases:
  - When you select DAILY for a Saturday or Sunday programme.
  - When you select DAILY or WEEKLY for a programme more than seven days ahead.
  - When you enter the G-CODE number of a programme that has already ended.
- If the VCR does not accept the setting, check the G-CODE number again and change it repeating from step **1**.

4 **Press ONCE, DAILY or WEEKLY according to the following table.**

To record the programme	Press
Only once	ONCE
Monday to Friday at the same scheduled time	DAILY
Every week at the same scheduled time	WEEKLY

The recording information appears on the TV screen: date, programme start and stop times, programme position number and tape speed.
Check that the information is correct. If it is not, press TIMER CLEAR to cancel the setting.
If you set the wrong G-CODE number, the VCR sounds short beeps.
To preset another timer setting, repeat steps **1** to **4**.



5 **Press ⏻ (on/standby) to turn off the VCR.**
The TIMER indicator on the VCR lights up. The VCR turns off automatically and enters timer recording standby mode.
The VCR automatically turns on, records the programme and turns off.

To stop recording

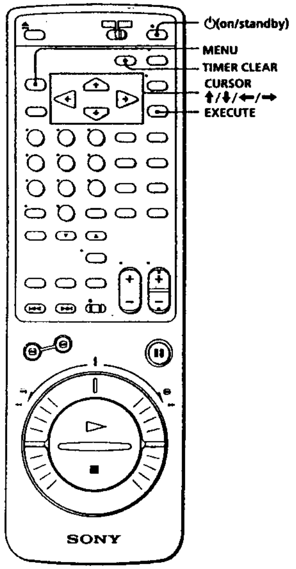
To stop while the VCR is recording a programme, press ■ STOP.

To record satellite broadcasts

If you connect the satellite tuner and the VCR, you can record satellite programmes.

1. Turn on the satellite tuner.
2. On the satellite tuner, select the satellite programme for which you wish to make a timer setting.
3. Repeat the steps described above.
4. Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

Checking/changing/ cancelling timer settings



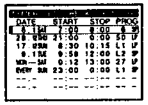
This section shows you how to check, change and cancel the timer settings after you've stored them in the VCR.

Before you start...

- Turn on your TV and tune in to the VCR.

1 Press ⏻ (on/standby) to turn on the VCR.

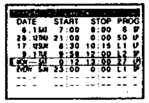
2 Press MENU and select TIMER SET/ CHECK.



DATE	START	STOP	PROG	
6.1SAT	7:00	8:00	6	SP
28.WTHU	21:00	0:00	50	LP
17.WSUN	8:30	10:15	L1	LP
9.1TUE	9:50	12:00	L2	SP
MON—SAT	0:12	13:00	27	LP
EVERY SUN	23:00	0:00	L1	SP
--.-	--:--	--:--	--	-
--.-	--:--	--:--	--	-

3 Check the timer settings in the list.

- If you don't want to change or cancel the settings, press ⏻ (on/standby) to return to recording standby.
- If you want to change or cancel the settings, press CURSOR ↑/↓ to move the cursor (▮) to the setting you want to change or cancel.



DATE	START	STOP	PROG	
6.1SAT	7:00	8:00	6	SP
28.WTHU	21:00	0:00	50	LP
17.WSUN	8:30	10:15	L1	LP
9.1TUE	9:50	12:00	L2	SP
MON—SAT	0:12	13:00	27	LP
EVERY SUN	23:00	0:00	L1	SP
--.-	--:--	--:--	--	-
--.-	--:--	--:--	--	-

4 Change or cancel the timer setting:

- To change the setting, press CURSOR ←/→ to highlight the item you want to change, and reset it using CURSOR ↑/↓. Then, press CURSOR → repeatedly until the cursor appears in the leftmost column.
- To cancel the setting, press TIMER CLEAR.

5 Press EXECUTE.

The VCR returns to the original screen. If there are any other timer settings left in the TIMER SET/CHECK menu, press ⏻ (on/standby) to return to recording standby.

To check the timer settings during timer recording

Press MENU and select TIMER SET/CHECK. After checking, press EXECUTE to turn off the display.

Additional instructions about timer recording

This section gives additional information about timer recording which you need after you have stored timer settings in the VCR.

To use the VCR while recording

You can do the following tasks during timer recording.

To	Press
Reset the counter to "0H00M00S"	COUNTER RESET
Display tape information on the TV screen	DISPLAY
Check the timer settings	MENU and select TIMER SET/ CHECK

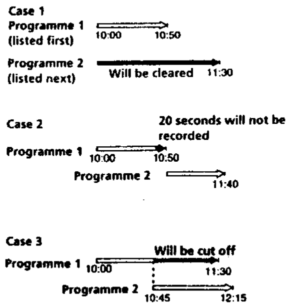
Using the VCR before timer recording begins

Press ⏻ (on/standby). The TIMER indicator on the VCR goes off and the VCR is ready for use.

After using the VCR, press ⏻ (on/standby) again to turn on the TIMER indicator on the VCR. Remember to reset the VCR to stand by for recording before the time you've set the VCR to start recording, or the timer setting will be cancelled.

When the timer settings overlap

The VCR will not record overlapping programmes. If any of your timer settings overlap, change the settings.



Case 1: If you preset two programmes to start recording at the same time...

The programme listed first in the TIMER SET/CHECK menu has priority over the other programmes. The timer settings of lower priority programmes will be erased from the list when the first programme begins recording.

Case 2: If you preset programme 2 to start recording at the same time you preset programme 1 to finish recording...

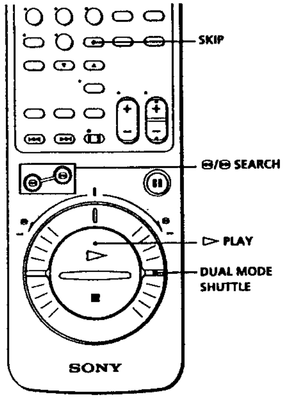
The last 20 seconds of programme 1 will not be recorded because the VCR will enter recording pause for programme 2 before programme 1 is finished.

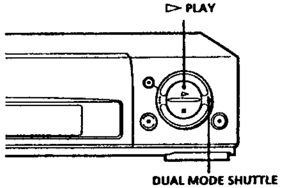
Case 3: If you preset programme 2 to start recording before programme 1 is finished recording...

Programme 2 will start recording before programme 1 has finished.

Playing/searching at various speeds

You can play back a tape at various speeds: high-speed, slow motion and so on. These options are also useful for searching for a specific point during playback. The sound is muted during these operations.





Playback options	**Operation**	**To resume normal playback**
Playing at various speeds:	During playback, turn the DUAL MODE SHUTTLE ring right or left to:	Release the ring.
One-fifth the normal speed	1/5	
The normal speed	1	
Twice the normal speed	×2	
High speed	⏪ or ⏩	
Fast-forwarding/ Rewinding	During stop, turn the DUAL MODE SHUTTLE ring to ▶▶ FF or to ◀◀ REW and release.	Press ▷ PLAY.
Viewing the picture during fast-forward or rewind	During fast-forward, turn the DUAL MODE SHUTTLE ring to ▶▶ FF. During rewind, turn the ring to ◀◀ REW.	To return to the previous mode, release the ring.
Locking in a high-speed picture	During playback or pause, press ⏪ SEARCH or ⏩ SEARCH.	Press ▷ PLAY.
Skipping a scene	During playback, press SKIP. Pressing once skips about 30 seconds.	The VCR automatically resumes normal playback.
Rewind and restart play	During stop, press ▷ PLAY on the VCR while holding the DUAL MODE SHUTTLE ring on the VCR at the ◀◀ REW position.	—

Tip

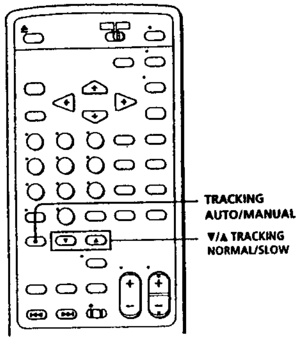
- Adjust the picture using ▼/▲ TRACKING NORMAL/SLOW STILL ADJUST if:
  - Streaks appear while playing in slow motion.
  - Bands appear on the top or bottom while pausing.
  - The picture shakes while pausing.

Notes

- If you use these functions in the LP mode, noise may appear or there may be no colour.
- When you view the picture of an NTSC-recorded tape in EP mode during fast-forward or rewind, "LP" may be displayed momentarily.

Adjusting the picture

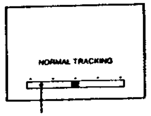
The VCR automatically adjusts the picture for the best possible playback or recording. If, however, you find the automatic adjustment unsatisfactory, you can adjust the picture manually.



Adjusting the tracking

Though the VCR automatically adjusts the tracking when playing a tape (the AUTO TRACKING indicator flashes in the display window, then lights steadily), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking condition.

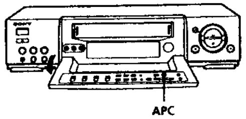
Press ▼/▲ TRACKING NORMAL/SLOW to display the tracking meter. The distortion should disappear as you press one of the two buttons. If you cannot get a clear picture with manual adjustment, press TRACKING AUTO/MANUAL to return to automatic adjustment.



Tracking meter

About Adaptive Picture Control (APC)

Adaptive Picture Control (APC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, press APC on the VCR so the APC indicator in the display window lights.



To use APC during playback

The APC function automatically works on all types of tapes, including rental tapes. You can play a tape using the APC function even if the tape was not recorded with it.

To use APC while recording

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the APC function (the APC indicator flashes rapidly). This adjustment is retained until the tape is ejected. There is a short delay before the VCR actually starts recording while the VCR analyses the tape.

If you want to start recording precisely the first time you record, set the VCR to recording pause mode (the APC indicator flashes slowly) and press ● REC to let the VCR analyse the tape. When the APC indicator stops flashing, press ❚❚ PAUSE to start recording. Recording begins immediately.

To deactivate the APC

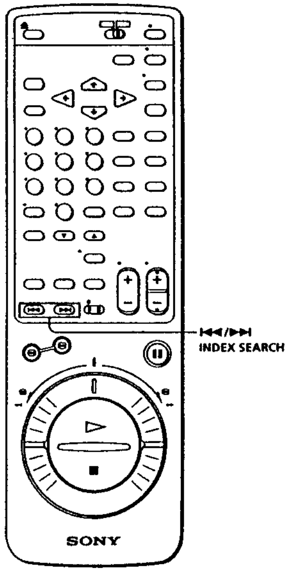
Press APC on the VCR. The APC indicator in the display window goes off.

Notes

- Tapes recorded using the APC function are played back normally on VCRs that do not have the APC function.
- Press ❚❚ PAUSE to start recording after the APC indicator stops flashing. If you start recording before the APC indicator stops flashing, the APC function is cancelled.

Searching using the index function

The VCR automatically marks an index signal at the point where recording starts (with the exception of when you start recording from recording pause). Use this as a reference to find the beginning of the recording. Since the index number indicates the relative position from the current position, specify how many index signals ahead or behind the specific index signal is from the current position.

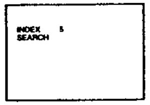


1 **Open the drop down panel and insert an indexed tape into the VCR.**

2 **Press ⏮/⏭ INDEX SEARCH repeatedly until the index number you want appears on the TV screen:**

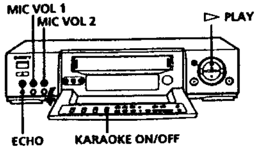
- To locate succeeding programmes, press ⏭ INDEX SEARCH.
- To locate preceding programmes, press ⏮ INDEX SEARCH.

The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.



Karaoke sing-along

You can sing along with a karaoke tape played back on the VCR, a TV broadcasts, or music played back on equipment connected to the LINE IN jacks on the VCR. You can also connect two microphones to sing duets.



Tip

- When you sing along with TV broadcasts or music played back on equipment connected via the LINE IN jacks on the VCR, turn on the playback source, then follow steps **1** and **4-6**.

Notes

- If the sound is reproduced through a stereo amplifier, turn down the volume of amplifier before operation.
- If the microphone volume is too high, the sound may be distorted.
- If feedback occurs, turn down the microphone volume or the sound volume of the TV, or move the microphone away from the speakers.

Singing along with karaoke tapes

Before you start...

- Turn on the TV and tune in to the VCR.
- Connect the microphone (or two microphones) to the MIC IN 1 and/ or MIC IN 2 jack(s).

1 **Set the KARAOKE ON/OFF switch on the VCR to ON.**
The indicators around the MIC VOL 1, MIC VOL 2 and ECHO controls light up.

2 **Insert a karaoke tape.**
The VCR turns on automatically. The tape starts playing automatically if its safety tab has been removed.

3 **Press ▷ PLAY to start playing.**
If streaks appear during playback, select the colour system that the tape was recorded in. (See "To set the colour system" on page **21**.)

4 **Set the ON/OFF switch on the microphone to ON and sing into the microphone(s).**

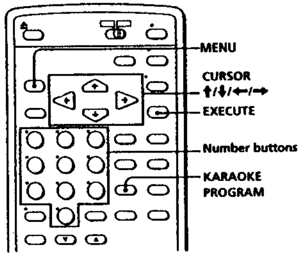
5 **Turn the MIC VOL 1 and/or MIC VOL 2 control(s) to adjust the microphone volume.**

6 **Turn the ECHO control to adjust the strength of echo.**
This applies the echo effect to both microphones.

Now you can enjoy playing karaoke.

For optimum echo effect
Adjust the microphone volume to a little higher level than the music volume to obtain the best echo effect.

Karaoke sing along
(continued)



Tips

- AMS(Automatic Music Sensor) searches for blank spaces at least 4 seconds long between recorded tape segments. INDEX searches for index signals already recorded on the tape. Check the cassette box to see if a tape is index-compatible or not.
- You can enter up to 10 songs, indexed from 1 to 99, on your custom karaoke list.
- You can also select KARAOKE PROGRAM menu by pressing MENU and CURSOR ↑/↓

Notes

- If there is excessive noise between the songs during AMS search, AMS search may not work properly and the selected song order may not be played correctly.
- ⏮/⏭ INDEX SEARCH works in a different way while in KARAOKE PROGRAM mode. For details, see "When you use ⏮/⏭ INDEX SEARCH in KARAOKE PROGRAM mode" on the next page.
- If you set the KARAOKE ON/OFF switch to OFF, the list settings are cleared.
- When you use ⏏EJECT or ⏻(on/standby), the VCR exits the KARAOKE PROGRAM mode.
- If you rewind past the beginning of the current song using a optional microphone with a linear rewind function, the selected song order may not be played correctly.
- During playback in KARAOKE PROGRAM mode, you can't change the programmed order. To change the order, press ■ STOP and repeat steps **4** to **6**.

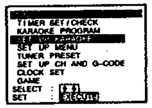
Playing a tape in a programmed order

The VCR allows you to index and edit any tape, so that you can perform songs in the order you want.

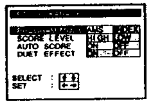
Before you start...

- Turn on the TV and tune in to the VCR.

1 **Press MENU and select SET UP KARAOKE using CURSOR ↑/↓, then press EXECUTE.**



2 **Press CURSOR ↑/↓/←/→ to move the cursor (▮) to PROGRAM MODE and select AMS or INDEX, then press EXECUTE.**

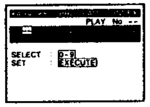


- If you use an index-compatible tape, select INDEX.
- If the tape is not index-compatible, or you are not sure of the tape type, select AMS.

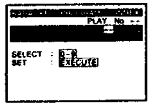
The programme mode you set, INDEX or AMS, appears in the display window.

3 **Insert a tape and set the KARAOKE ON/OFF switch on the VCR to ON.**

4 **Press KARAOKE PROGRAM.**
The KARAOKE PROGRAM menu appears on the TV screen.

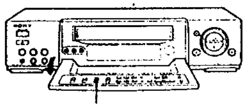


5 **Press the number buttons to select the song order you want.**
For single-digit numbers, first press "0" then the song number. If you press the wrong number, highlight the field you want to correct and reenter the number.



6 **Press EXECUTE to start playing.**
The tape automatically rewinds to the beginning, and playback starts in the order you selected. While the VCR searches for a song, the song number flashes in the display window.

To stop playing
Press ■ STOP.



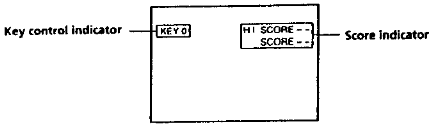
Notes

- Vocal reduction does not work with the following tapes:
  - Tapes on which different vocal sounds are recorded on the left and right channels, such as a duet.
  - Monaural recorded tapes
  - Tapes on which sound sources are recorded with strong echo-effects and/or chorus-effects.
- Vocal Assist does not work with the following tapes:
  - Hi-fi tapes on which a single sound is recorded on the left and right channels.
  - monaural recorded tapes.

When you use ⏮/⏭ INDEX SEARCH in KARAOKE PROGRAM mode
The VCR rewind the tape to the beginning of the song being played back, or fast-forwards to the next song. You cannot search beyond the current song. When the VCR exits KARAOKE PROGRAM mode, ⏮ INDEX SEARCH and ⏭ INDEX SEARCH return to the normal function. (See "Searching using the index function" on page **36**.)

Displaying the karaoke information

Press DISPLAY once when the KARAOKE ON/OFF switch is set to ON. The karaoke information appears on the TV screen. If you press DISPLAY twice, the remaining tape length and tape counter also appear.
To turn off the display, press DISPLAY again.



Reducing the vocals (Karaoke Pon)

This function reduces the vocals on the play back source media. You can enjoy singing with hi-fi stereo music video tapes or hi-fi stereo tapes on which music programmes have been recorded from TV.
Set the KARAOKE MODE switch to KARAOKE PON, which lowers the singer's voice.

To cancel the vocal reduction
Set the KARAOKE MODE switch to OFF.

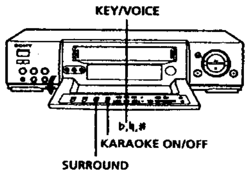
Vocal Assist

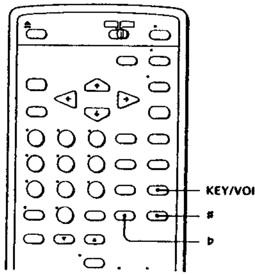
With this function you can make use of karaoke stereo hi-fi tapes. These tapes have only the accompaniment music on the left channel and the accompaniment plus the vocal on the right channel.
If you forget the words while singing and stop singing into the microphone, this function will automatically fill in the vocal for you using the recorded vocal.
Set the KARAOKE MODE switch to VOCAL ASSIST.

To cancel the vocal assist
Set the KARAOKE MODE switch to OFF.

Karaoke sing along
(continued)

Note
- Before you use the KARAOKE MODE switch, the KARAOKE SURROUND switch, the buttons on the microphone, and the KEY CONTROL buttons, set the KARAOKE ON/OFF switch to ON.





Tip
- To change the pitch and repeat playback of songs via the microphone, use the F-KM1 microphone (not supplied). Connect the control plug of the microphone to the CONTROL jack on the front panel of the VCR. For details, consult your Sony service facility.

Surround Sound

You can use the karaoke surround sound effect to simulate two acoustic atmospheres.
Set the KARAOKE SURROUND switch to HALL to simulate the acoustic of a large concert hall. Set the KARAOKE SURROUND switch to KARAOKE BAR to simulate the acoustic of a small room.

To cancel the surround sound effect
Set the KARAOKE SURROUND switch to OFF.

Changing the pitch (Key Control)

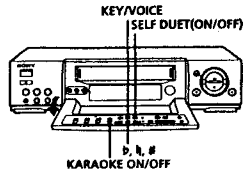
While you are singing, you can change the pitch of your voice or the song so they are in tune.

1 Set the KARAOKE ON/OFF switch to ON.
2 Press KEY/VOICE.
With each press, the VOICE/KEY indicator in the display window toggles between "VOICE" and "KEY".

To change the pitch of the song, select KEY.
To change the pitch of your voice, select VOICE.

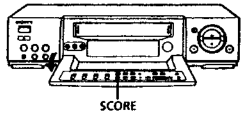
3 Press one of the KEY CONTROL buttons repeatedly to set the pitch you want. You can change the pitch of the song in half note intervals and your voice in whole note intervals. The pitch you set appears on the VCR display.

To	Press	Range		Display indicator
		KEY	VOICE	
raise the pitch	♯(sharp)	7 half notes	7 notes	"♯1" to "♯7"
reset the default pitch	♮(natural) on the VCR	—	—	"0"
lower the pitch	♭(flat)	7 half notes	7 notes	"♭1" to "♭7"



Note
- You cannot change the pitch of a song while in SELF DUET mode. If you press KEY/VOICE in SELF DUET mode, the KEY indicator lights and the Self Duet function does not work. To go back to SELF DUET mode, press KEY/VOICE again.

Note
- Duet Effect is effective when the interval of the harmony ranges from ♭4 to ♯4.



Notes
- The highest possible score is 99 points. Scores over 90 flash.
- The score is also displayed on the VCR. The highest score flashes when you improve on it. When you get over 90 points without improving on the high score, "GOOD" appears and your score flashes.
- When you press DISPLAY, the score appears on the TV screen.
- The highest score is cleared each time you set the KARAOKE ON/OFF switch to OFF.
- Even in Auto Score mode you can get the score at any time by pressing SCORE.
- The result of grading is not absolute or exclusive. Please use this function just for amusement.

Self Duet

You can sing duets by yourself. The VCR creates a harmony voice for your vocal at an interval set with the key control.

1 Set the KARAOKE ON/OFF switch to ON.
2 Press KEY/VOICE to light the VOICE indicator in the display window.
3 Press SELF DUET.
The S.D indicator lights. "DUET" appears on the TV screen.

4 Press ♯(sharp) or ♭(flat) to set the interval of the harmony.
As you sing the melody, the VCR produces a harmony voice at the set interval. To change the pitch, see "Changing the pitch" on page **40**.

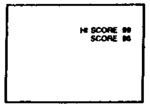
To cancel Self Duet
Press SELF DUET so that the S.D indicator goes off. The VCR saves the last pitch you selected. To return to the default pitch, press ♮(natural) on the VCR.

To improve Duet Effect
You can set the VCR to add vibrato to the harmonized voice when the duet is not in harmony. Press MENU and select SET UP KARAOKE, then set DUET EFFECT to ON.

Grading karaoke singing

As an extra challenging the VCR can grade your singing.

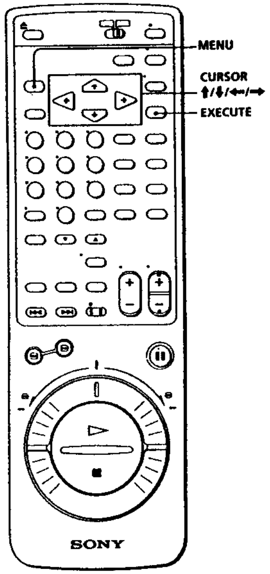
1 Start singing and press SCORE.
The SCORE indications light up on the TV screen. The VCR starts to analyse your singing.
2 Press SCORE again after singing for more than one minute.
Your score appears on the TV screen for five seconds. The highest score (High Score) is saved and is also indicated above your present score.



To score automatically (Auto Score)
The VCR automatically scores each song in order in KARAOKE PROGRAM mode. Press MENU and select SET UP KARAOKE, then set AUTO SCORE to ON. Each time the song ends, the score appears for five seconds.

To set score level
You can select either strict grading or easy grading by setting the score level. Press MENU and select SET UP KARAOKE, then set SCORE LEVEL to HIGH or LOW.

Game play



Notes
- Long game play sessions consume much battery power from the remote commander, and reduce battery life.
- Due to discrepancies between television systems, the size of the game screen may differ between PAL and NTSC monitors.

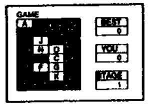
One special feature that will add lots of enjoyment to the basic VCR concept of recording and playback is this true video game, The Tile Game.

Overview

The goal of this game is to collect as many points as possible by removing tiles in pairs. The tiles are arranged in three coloured layers: red on the top, blue in the middle, and grey on the bottom. The tiles can only be removed when they are selected according to the following conditions.
- You must select tiles in pairs.
- The two selected tiles must have the same character.
- The tile you select must not be bordered by other tiles on both left and right sides.

Playing the game

1 Press MENU.
2 Select GAME and press EXECUTE. The tiles appear on the TV screen.



Top layer : Red
Middle layer : Blue
Bottom layer : Grey

3 Select a tile by moving the arrow on the screen to the desired tile with CURSOR ↑/↓/←/→, then press EXECUTE.
The selected tile is then highlighted. If it is not highlighted, then that tile is not available.
You can de-select a tile by moving the arrow to a highlighted tile, then press EXECUTE. The highlighted tile returns to its original colour.
4 Select a matching tile in the same manner. The tiles will be removed from the screen, and you will receive one point.
5 Repeat steps **3** and **4** removing as many tiles as you can. When all the tiles are removed, you move up to the next stage.

Collecting points

Two scores are shown on the right side of the screen. "BEST" shows the highest score achieved. "YOU" shows the score for this game (your combined score from all the stages cleared plus the current stage). The high score is saved in the VCR memory.

Game over

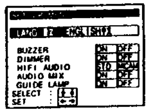
When there are no more matching tiles, the game is over. There are 255 stages, each stage becoming slightly more difficult. If you clear the 255th stage, the game ends.

To start a new game, press EXECUTE.

To exit the game, press MENU.

Looking at menu options

The SET UP MENU provides you with various options to set up and customize your VCR. See the table below for the available menu choices. Initial settings are indicated in bold letters.



Menu choices

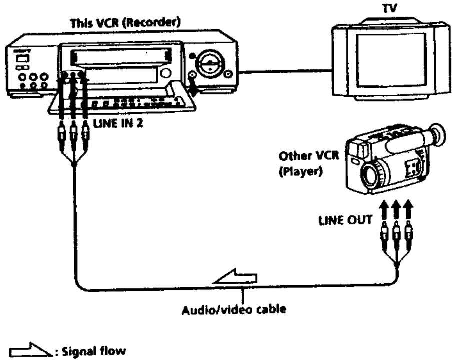
Menu option	Set this option to
LANG/ 語文	• **ENGLISH** to set the on-screen language to English. • 中文 to set the on-screen language to Chinese.
BUZZER	• **ON** to output a beep sound when an illogical operation is made. • OFF to deactivate it.
DIMMER	• ON to dim the VCR display. • **OFF** to brighten it.
HIFI AUDIO *(SLV-K872MN only)*	• STD to record standard sound on a hi-fi audio track. • **NICAM** to record NICAM broadcasts on a hi-fi audio track. For details, see page **26**.
AUDIO MIX	• ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button becomes inoperable. • **OFF** to select the sound using the AUDIO MONITOR button. For details, see page **22**.
GUIDE LAMP	• **ON** to illuminate the DMS ring, MIC VOL 1/2 controls, REC button and TIMER indicator on the VCR. • OFF to turn them off.

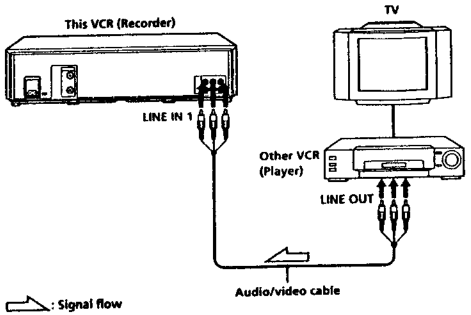
Editing

Editing with another VCR

This section shows you how to edit to or from another VCR or camcorder. You can make a copy of a tape using this VCR for recording or playback.

How to hook up to record on this VCR

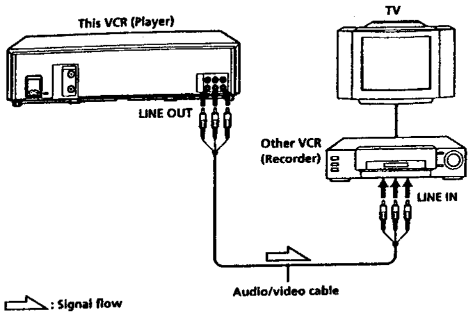

This VCR (Recorder)
TV
LINE IN 2
Other VCR (Player)
LINE OUT
Audio/video cable
: Signal flow


This VCR (Recorder)
TV
LINE IN 1
Other VCR (Player)
LINE OUT
Audio/video cable
: Signal flow

Tips

- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.

How to hook up to record on another VCR


This VCR (Player)
TV
LINE OUT
Other VCR (Recorder)
LINE IN
Audio/video cable
: Signal flow

Tips

- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.

Operation (when recording on this VCR)

Before you start...

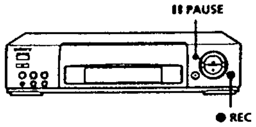
- Press INPUT SELECT to display "L1" or "L2" in the display window.
- Press TAPE SPEED to select the recording tape speed (SP/LP).

1 **Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.**

2 **Open the drop down panel and insert a tape into this (recording) VCR. Search for the point to start recording and press ❚❚ PAUSE.**

3 **Press ● REC on this VCR and set it to recording pause.**

4 **To start editing, press the ❚❚ PAUSE buttons on both VCRs to release the VCRs from pause.**
For best results, press the pause button on the other VCR before pressing ❚❚ PAUSE on this VCR.



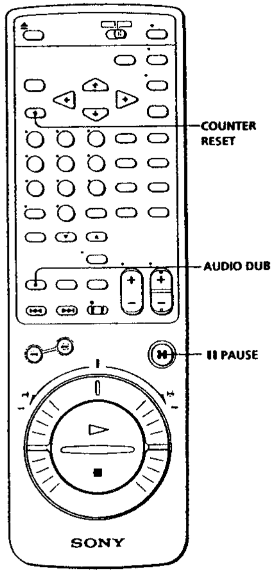
Tips

- To make your editing more precise, use the pause buttons on both VCRs.
- To cut out unwanted scenes while editing, press ❚❚ PAUSE on this VCR when an unwanted scene begins. When it ends, press ❚❚ PAUSE again to resume recording (Assemble Editing).

To stop editing
Press the ■ STOP buttons on both VCRs.

Audio dubbing

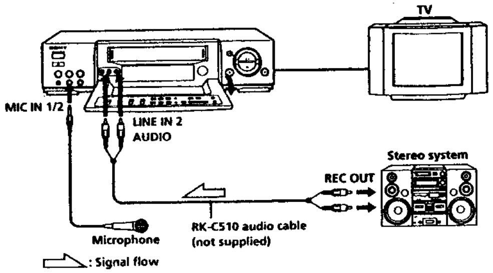
You can add music, songs or narration on the normal audio track. The monaural sound previously recorded is replaced while the original picture and hi-fi sound on the main track are retained. (See page 22.)



Note

- You must be in playback pause mode before pressing AUDIO DUB. (If you are in recording pause mode, you cannot use the audio dubbing function.)

How to hook up



Audio dubbing from a stereo system

Before you start editing

- Connect audio source equipment to the LINE IN 2 AUDIO jacks of this VCR.
- Press INPUT SELECT to display "L2" in the display window.
- Make sure that the KARAOKE ON/OFF switch on the VCR is set to OFF.

1 Play a recording source. Search for the point to start playback and set it to playback pause.

2 Insert the prerecorded tape into this VCR. Search for the end of the section you want to dub new sound to and press II PAUSE.
Make sure that the tape has its safety tab in place so that you can dub new sound onto it.

3 Press COUNTER RESET to reset the counter to "0H00M00S."

4 Rewind the tape to the beginning of the section.
This VCR pauses.

5 Press AUDIO DUB.
The A-DUB indicator lights up in the display window.

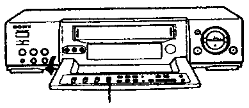
(continued)

6 To start editing, simultaneously press the II PAUSE buttons on this VCR and the stereo system.
When the counter of this VCR reaches "0H00M00S," audio dubbing stops automatically.

To stop editing
Press the ■ STOP buttons on this VCR and the stereo system.

Audio dubbing from the microphone

Using the microphone you can add songs or narration on a recorded tape. Sound from the microphone is recorded on the normal audio track, mixed with hi-fi sound on the main track.



Before you start editing

- Connect the microphone(s) to the MIC IN 1 and/or 2 jack(s) and turn on the microphone(s).

1 Set the KARAOKE ON/OFF switch on the VCR to ON.

2 Insert the prerecorded tape into the VCR. Search for the end of the section you want to dub new sound to and press II PAUSE.
Make sure that the tape has its safety tab in place so that you can dub new sound onto it.

3 Press COUNTER RESET to reset the counter to "0H00M00S."

4 Rewind the tape to the beginning of the section.
The VCR pauses.

5 Press AUDIO DUB.
The A-DUB indicator lights up in the display window.

6 Press II PAUSE on the VCR to start dubbing and sing or speak into the microphone.
When the counter of the VCR reaches "0H00M00S," audio dubbing stops automatically.

To stop editing
Press ■ STOP.

Tip

- When dubbing from the microphone, you can use the functions of echo effect, key control and Self Duet.

Note

- Do not dub on a tape recorded in LP mode. Audio noise may occur.

Listening to the dubbing sound

When playing an audio-dubbing tape, you have a choice of listening sound. To listen to the dubbing sound, press AUDIO MONITOR to select standard sound. (See page 22.)

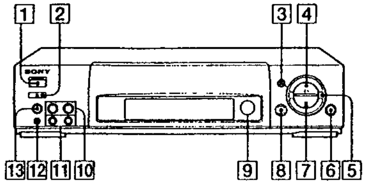
Tip

- To listen to the sounds recorded on the hi-fi audio and normal audio tracks at the same time, set AUDIO MIX to ON using the SET UP MENU option. (See page 22.)

Index to parts and controls

Refer to the pages indicated in ( ) for details.

Front panel, with cover closed



1 ON/STANDBY switch/indicator (8)

2 ≙ EJECT button

3 ❚❚ PAUSE button (45)

4 ▷PLAY button (34)

5 DUAL MODE SHUTTLE ring (34)

6 ● REC (recording) button/indicator (45)

7 ■ STOP button

8 TIMER indicator (29)

9 Remote sensor (6)

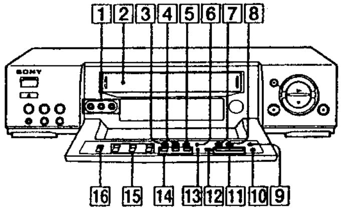
10 MIC VOL 1/2 controls/indicators (37)

11 MIC IN 1/2 jacks (37, 47)

12 CONTROL jack (40)

13 ECHO control (37)

Front panel, with cover opened



1 LINE IN 2 jacks (44, 46)

2 Tape compartment

3 SCORE button (41)

4 KEY/VOICE button (40, 41)

5 SELF DUET (ON/OFF) button (41)

6 RF CH SET button (8)

7 AUDIO DUB button (46)

8 APC button (35)

9 QUICK TIMER button (23)

10 TAPE SPEED button (22)

11 PROGRAM +/– button (8)

12 INPUT SELECT button

13 EASY SET UP button (9)

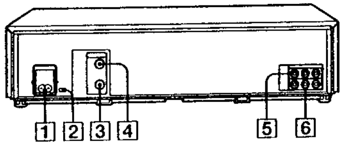
14 KEY CONTROL (♭, ♮, ♯) buttons (40, 41)

15 KARAOKE switches
  SURROUND switch (40)
  MODE switch (38)
  ON/OFF switch (37, 47)

16 COLOR SYSTEM switch (21)

Index to parts and controls
(continued)

Rear panel



1 AC IN connector (7)

2 NTSC PB switch (21)

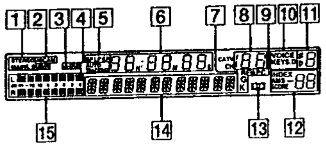
3 AERIAL IN connector (7)

4 AERIAL OUT connector (7)

5 LINE IN 1 jacks (44)

6 LINE OUT jacks (45)

Display window



1 Sound indicators (27)

2 NICAM indicator (26) *(SLV-K872MN only)*

3 A-DUB (audio dubbing) indicator (46)

4 AUTO TRACKING indicator (35)

5 Tape speed indicators (24)

6 Linear time counter/clock (12, 21)

7 RF/TV system indicators (8)

8 Line/programme position indicator (23)

9 APC indicator (34)

10 VOICE/KEY/S.D(Self duet) indicators (40, 41)

11 Key indicators (40,41)

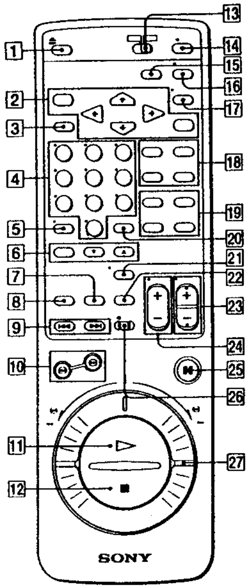
12 Index search/Karaoke programme/SCORE indicators (36, 38, 41)

13 Tape indicator

14 Colour system/Karaoke mode indicator (21, 37)

15 Audio channel/sound level indicator (22)

Remote commander



- 1 ≜ EJECT button (20)
- 2 Menu buttons (11)
  - MENU button
  - CURSOR ↑/↓/←/→ buttons
  - EXECUTE button
- 3 COUNTER RESET button (21)
- 4 Programme number buttons (23)
- 5 -/-- (ten's digit) button (23)
- 6 TRACKING buttons (35)
  - ▼/▲ TRACKING
  - NORMAL/SLOW STILL
  - ADJUST buttons
  - AUTO/MANUAL button
- 7 TAPE SPEED button (23)
- 8 AUDIO DUB button (46, 47)
- 9 ⏮/⏭ INDEX SEARCH buttons (36)
- 10 ⊖/⊕ SEARCH buttons (34)
- 11 ▷ PLAY button (20)
- 12 ■ STOP button (20)
- 13 TV/ VTR remote control switch (6)
- 14 ⏻ (on/standby) button (9)
- 15 TIMER CLEAR button (32)
- 16 TV/VIDEO button
- 17 AUDIO MONITOR button (22, 47)
- 18 G-CODE buttons *(SLV-K872MN/K872PS only)*(30, 31)
  - G-CODE button
  - ONCE button
  - DAILY button
  - WEEKLY button
- 19 KARAOKE buttons
  - PROGRAM button (38)
  - KEY/VOICE button (40, 41)
  - ♭(flat) button (40)
  - ♯(sharp) button (40)
- 20 SKIP button (34)
- 21 DISPLAY button (21, 33, 39)
- 22 INPUT SELECT button (46)
- 23 PROG (programme) +/- button (23)
- 24 VOL (volume) +/- button
- 25 ❚❚ PAUSE button (20)
- 26 ● REC button (23)
- 27 DUAL MODE SHUTTLE ring (20, 34)

SLV-KH3CH/KH3ME/KH3PS MODELS

Welcome!

Thank you for purchasing the Sony Video Cassette Recorder (VCR). Here are some of the features you'll enjoy with your VCR:

- Karaoke function which lets you sing to the tunes of your favourite songs
- Adaptive Picture Control (APC) that automatically optimizes recording and playback performance
- Dual Mode Shuttle (DMS) ring for easy playback and search operations

Compatible colour systems

- This VCR is designed to record and play back using the PAL, MESECAM (systems G and K), or NTSC colour systems. Recording of video sources based on other colour systems cannot be guaranteed.

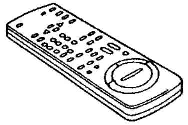
Checking your model name

The instructions in this manual are for the SLV-KH3ME and SLV-KH3PS. Check your model number by looking at the rear panel of your VCR. Any difference in operation is clearly indicated in the text, for example, *"SLV-KH3ME only."*

Step 1 Unpacking

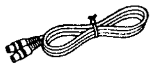
Check that you have the following items:

- **Remote commander**



- **R6 (size AA) batteries**

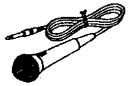
- **Aerial cable**



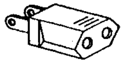
- **Audio/video cable**

- **Mains lead**

- **Microphone**



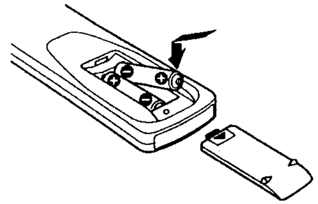
- **Plug adaptor** ***(SLV-KH3ME only)***



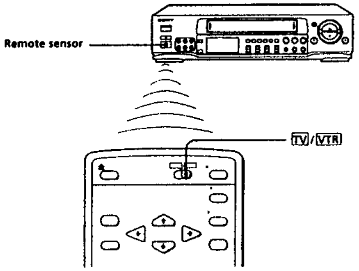
This section is extracted from SLV-KH3ME/KH3PS instruction manual.

Step 2 Setting up the remote commander

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.



Using the remote commander
You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your TV.



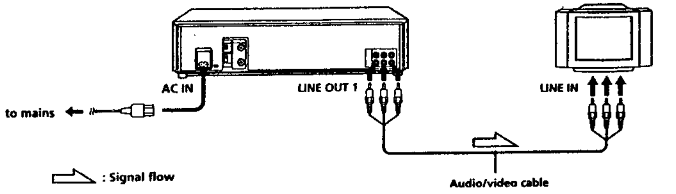
To operate	Set TV / VTR to
The VCR	VTR and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Notes
- With normal use, the batteries should last for approximately three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.

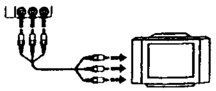
Step 3 Connecting the VCR

A : Audio/video connection

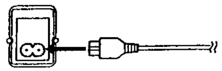
If your TV does not have audio/video input jacks, go to the step "B : Aerial connection."



1 **Connect LINE OUT 1 of the VCR and the line input jacks of your TV using the supplied audio/video cable.**

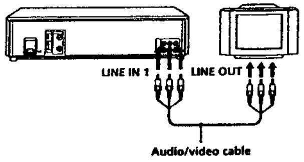


2 **Connect AC IN of the VCR and the mains supply using the mains lead.**
You've completed the basic hookup to watch TV programmes.

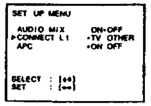


Additional connection

To a TV that has audio/video output jacks
You can record a TV programme showing on a TV. Connect LINE IN 1 of the VCR to the audio/video output jacks of the TV as shown on the right. For details, see "Recording a TV programme" on page **24**. When connecting simultaneously the LINE IN 1 and LINE OUT 1 jacks on the VCR to your TV, use the following procedure to set up the VCR. (See page **26**.)



1 Press MENU .
2 Select SET UP MENU by moving the cursor (▶) with CURSOR ↑/↓ , then press EXECUTE.
3 Select CONNECT L1 and move the dot (•) to TV with CURSOR ←/→, then press EXECUTE.

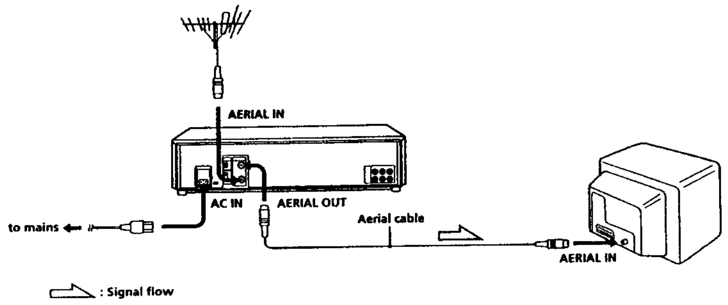


```
SET UP MENU

 AUDIO MIX       ON•OFF
▶CONNECT L1     •TV OTHER
 APC            •ON OFF


SELECT  : [↕]
SET     : [↔]
```

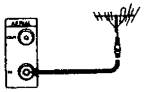
Note
- When you connect the LINE IN 1 jacks of the VCR to other equipment, set CONNECT L1 to OTHER.

B : Aerial connection

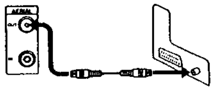
If you have connected the VCR to your TV using the audio/video cable, skip this step.



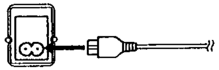
1 **Disconnect the aerial input cable from your TV and connect it to AERIAL IN of the VCR.**



2 **Connect AERIAL OUT of the VCR and the aerial input of your TV using the supplied aerial cable.**

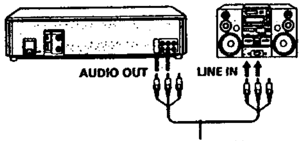


3 **Connect AC IN of the VCR and the mains supply. using the mains lead.**
You've completed the basic hookup to watch TV programmes.



Additional connection

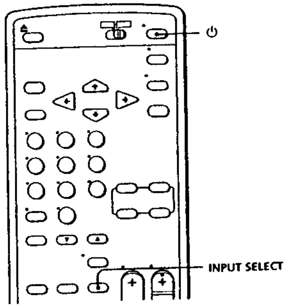
To a stereo system
You can improve sound quality by connecting to a stereo system as shown on the right.



Audio/video cable

Step 4 Tuning the TV to your VCR

If you have connected the VCR to your TV using the audio/video cable, skip this step.



1 ⏻ **Press ⏻ (on/standby) to turn on the VCR.**

2 INPUT SELECT **Press INPUT SELECT until "LINE 2" appears in the display window.**

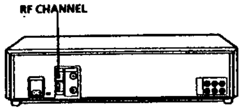
LINE 2

3 **Turn on your TV and select a programme position for video playback.**

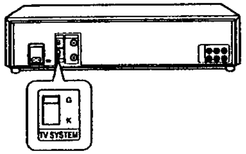
4 **Tune the TV between UHF channels 30 and 39 so that a clear blue screen with tape counter appears on the TV screen.**
Refer to your TV manual for tuning instructions.

5 INPUT SELECT **Press INPUT SELECT until "LINE 2" disappears.**
You have now tuned your TV to the VCR. Whenever you play a tape, set the TV to the programme position selected in step 3 above.

Step 4 Tuning the TV to your VCR (continued)



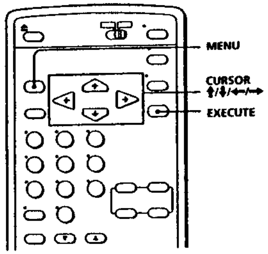
To obtain a clear blue screen
The blue screen may not appear clearly in step 4 above. In this case, turn the RF CHANNEL screw at the rear of the VCR with an RF screwdriver, to a position where the TV clearly displays a blue screen.



Selecting the TV system
For your TV to receive the correct signal from your VCR, you must set the TV SYSTEM switch at the rear of the VCR either G or K. If this TV SYSTEM switch for the output signal is set to the wrong position, the sound is distorted.

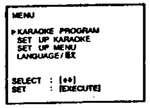
Step 5 Selecting a language

You can select the on-screen display language, English or Chinese.



1

Press MENU.
The main MENU appears on the TV screen.



MENU

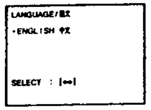
▶KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
LANGUAGE/語文

SELECT : [↑↓]
SET : [EXECUTE]

2

CURSOR
EXECUTE

Press CURSOR ↑/↓ to move the cursor (▶) to LANGUAGE, then press EXECUTE.
The language select menu appears.

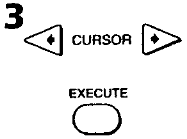


LANGUAGE/語文

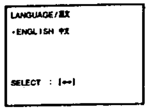
•ENGLISH 中文

SELECT : [←→]

3



Press CURSOR ←/→ to move the dot (•) to desired language, then press EXECUTE.



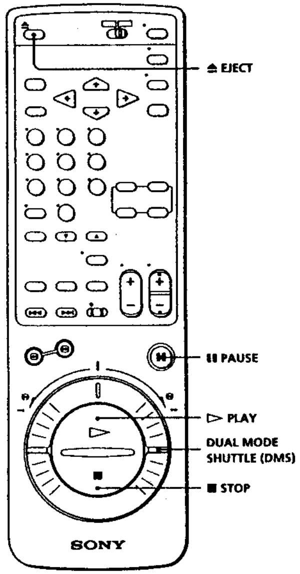
LANGUAGE/語文

•ENGLISH 中文

SELECT : [←→]

Operations

Playing a tape



Tip
- For further information on searching and playback functions, see "Playing/searching at various speeds" on page 15.

This section shows you how to play back a video tape.

1 Turn on your TV and tune in to the VCR:
- If the TV is connected to the VCR using the audio/video cable, set the TV to video input.
- If the TV is connected to the VCR using the aerial cable, set the TV to the programme position for the VCR.

2 Insert a tape.
The VCR turns on automatically. The tape starts playing automatically if its safety tab has been removed. (See page 24.)

3 Press ▷ PLAY to start playing.
When the tape reaches the end, the VCR automatically rewinds it to the beginning. (The power remains on.)

Additional tasks

To	Press
Stop play	■ STOP
Pause play	II PAUSE
Resume play after pause	II PAUSE or ▷ PLAY
Search forward	Turn the DUAL MODE SHUTTLE (DMS) ring to ⊕ during playback
Search backward	Turn the DMS ring to ⊖ during playback
Fast-forward the tape	Turn the DMS ring to ▶▶ FF during stop
Rewind the tape	Turn the DMS ring to ◀◀ REW during stop
Eject the tape	≜ EJECT

Note
- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
  - The picture becomes black and white.
  - The picture shakes.
  - No picture appears on the TV screen.
  - Black streaks appear horizontally on the TV screen.
  - The colour density increases or decreases.
  - The display does not appear properly during search forward or search backward.

Notes
- The remaining tape length will not appear while playing an NTSC-recorded tape.
- The display won't appear during still mode or slow-motion playback.
- When the KARAOKE ON/OFF switch is set to ON, the VCR displays the karaoke information. (See page 21.)
- When you insert a short tape such as E-30 or a non-standard commercially available tape, the remaining tape length may not be correct.

Notes
- When a tape is reinserted, the counter returns to "0 : 00 : 00".
- The counter will not work on tape portions with no recording.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.

To set the colour system

If streaks appear during playback, set the COLOR SYSTEM switch on the VCR to conform to the system that the tape was recorded in. (The normal setting is AUTO.)

When your tape was recorded in	Set COLOR SYSTEM to
PAL	PAL/MESECAM
NTSC	NTSC
MESECAM	PAL/MESECAM

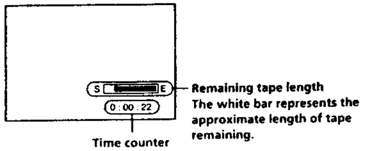
To play an NTSC-recorded tape

Set the NTSC PB switch at the rear of the VCR according to the colour system of your TV.

When your TV is	Set NTSC PB to
PAL	ON PAL TV
NTSC 4.43	NTSC 4.43
NTSC 3.58	NTSC 3.58

Displaying the remaining tape length and time counter

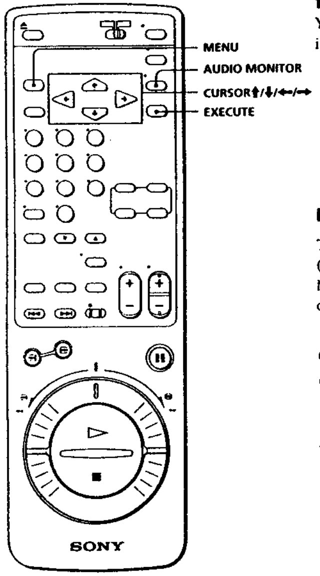
Press DISPLAY to turn the display on or off.


S
E
0 : 00 : 22
Remaining tape length
The white bar represents the approximate length of tape remaining.
Time counter

Using the time counter

At the point on a tape that you want to find later, press COUNTER RESET to reset the counter to "0 : 00 : 00". When you rewind or advance the tape to this point, refer to the counter.

Notes
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.
- To play a tape in stereo, you must use the AUDIO OUT connection.
- If AUDIO MIX in the SET UP MENU is set to ON, the AUDIO MONITOR button doesn't work.



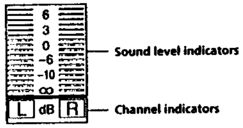
Playing stereo and bilingual programmes

Press AUDIO MONITOR to select the desired sound. Each press of the button changes the display on the VCR and TV screen.

To listen to a		Press AUDIO MONITOR until	
Stereo tape	**Bilingual tape**	**The TV screen shows**	**The display window indicator shows**
Stereo	Main and sub sounds	"STEREO"	Ⓛ Ⓡ
Left channel	Main sound	"LCH"	Ⓛ
Right channel	Sub sound	"RCH"	Ⓡ
Standard sound (monaural)	Standard sound	No indication	No indication

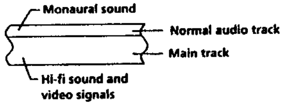
To check audio channel and sound level

You can check the audio channel and sound level visually with the indicators in the display window.



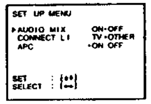
How sound is recorded on a video tape

This VCR records sound onto two different tracks. High-fidelity sound (usually stereo) is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.



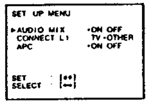
To listen to hi-fi and normal audio at the same time

1 Press MENU and select SET UP MENU.



```
SET  UP MENU

▸AUDIO  MIX        ON·OFF
 CONNECT L1        TV ·OTHER
 APC              ·ON OFF

SET      : [↑↓]
SELECT   : [←→]
```

2 Select AUDIO MIX and set to ON using CURSOR ↑/↓/←/→.
The AUDIO MONITOR button becomes inoperative, and the sound you hear is mixed.

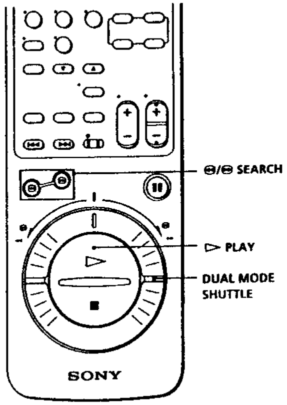


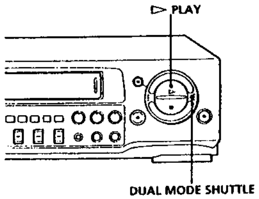
```
SET  UP MENU

▸AUDIO  MIX       ·ON OFF
 CONNECT L1        TV ·OTHER
 APC              ·ON OFF

SET      : [↑↓]
SELECT   : [←→]
```

3 Press EXECUTE to store the setting.
After playing the tape, reset AUDIO MIX to OFF.

Playing/searching at various speeds

You can play back a tape at various speeds: high-speed, slow motion and so on. These options are also useful for searching for a specific point during playback. The sound is muted during these operations.





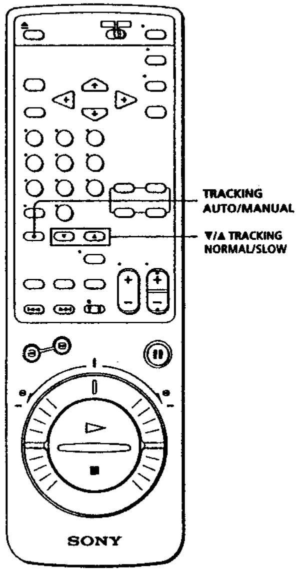
Playback options	Operation	To resume normal playback
Playing at various speeds:	During playback, turn the DUAL MODE SHUTTLE ring right or left to:	Release the ring.
One-fifth the normal speed	1/5	
The normal speed	1	
Twice the normal speed	×2	
High speed	⊖ or ⊕	
Fast-forwarding/ Rewinding	During stop, turn the DUAL MODE SHUTTLE ring to ▶▶ FF or to ◀◀ REW and release.	Press ▷ PLAY.
Viewing the picture during fast-forward or rewind	During fast-forward, turn the DUAL MODE SHUTTLE ring to ▶▶ FF. During rewind, turn the ring to ◀◀ REW.	To return to the previous mode, release the ring.
Locking in a high-speed picture	During playback or pause, press ⊖ SEARCH or ⊕ SEARCH.	Press ▷ PLAY.
Rewind and restart play	During stop, press ▷ PLAY on the VCR while holding the DUAL MODE SHUTTLE ring on the VCR at the ◀◀ REW position.	—

Tip
- Adjust the picture using ▼/▲ TRACKING NORMAL/ SLOW STILL ADJUST if:
  - Streaks appear while playing in slow motion.
  - Bands appear on the top or bottom while pausing.
  - The picture shakes while pausing.

Notes
- If you use these functions in the LP mode, noise may appear or there may be no colour.
- When you view the picture of an NTSC-recorded tape in EP mode during fast-forward or rewind, "LP" may be displayed momentarily.

Adjusting the picture

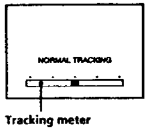
The VCR automatically adjusts the picture for the best possible playback or recording. If, however, you find the automatic adjustment unsatisfactory, you can adjust the picture manually.



Adjusting the tracking

Though the VCR automatically adjusts the tracking when playing a tape (the AUTO TRACKING indicator flashes in the display window, then lights steadily), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking condition.

Press ▼/▲ TRACKING NORMAL/SLOW to display the tracking meter. The distortion should disappear as you press one of the two buttons. If you cannot get a clear picture with manual adjustment, press TRACKING AUTO/MANUAL to return to automatic adjustment.



About Adaptive Picture Control (APC)

Adaptive Picture Control (APC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you leave APC ON on the SET UP MENU (with the APC indicator in the display window lit).

To use APC during playback
The APC function automatically works on all types of tapes, including rental tapes. You can play a tape using the APC function even if the tape was not recorded with it.

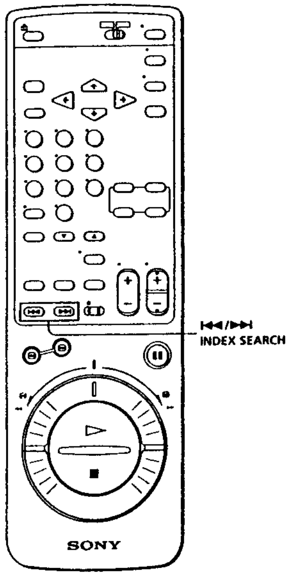
To use APC while recording
Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the APC function (the APC indicator flashes rapidly). This adjustment is retained until the tape is ejected. There is a short delay before the VCR actually starts recording while the VCR analyses the tape.

If you want to start recording precisely the first time you record, set the VCR to recording pause mode (the APC indicator flashes slowly) and press ● REC to let the VCR analyse the tape. When the APC indicator stops flashing, press ❚❚ PAUSE to start recording. Recording begins immediately.

To deactivate the APC
Press MENU and select SET UP MENU, then set APC to OFF. The APC indicator in the display window goes off.

Notes
- Tapes recorded using the APC function are played back normally on VCRs that do not have the APC function.
- Press ❚❚ PAUSE to start recording after the APC indicator stops flashing. If you start recording before the APC indicator stops flashing, the APC function is cancelled.

Searching using the index function

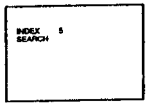


The VCR automatically marks an index signal at the point where recording starts (with the exception of when you start recording from recording pause). Use this as a reference to find the beginning of the recording. Since the index number indicates the relative position from the current position, specify how many index signals ahead or behind the specific index signal is from the current position.

1. **Insert an indexed tape into the VCR.**

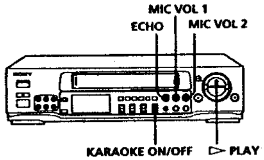
2. **Press ⏮/⏭ INDEX SEARCH repeatedly until the index number you want appears on the TV screen:**
   - To locate succeeding programmes, press ⏭ INDEX SEARCH.
   - To locate preceding programmes, press ⏮ INDEX SEARCH.

   The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.



Karaoke sing-along

You can sing along with a karaoke tape played back on the VCR, a TV broadcasts, or music played back on equipment connected to the LINE IN jacks on the VCR. You can also connect two microphones to sing duets.



Singing along with karaoke tapes

Before you start...

- Turn on the TV and tune in to the VCR.
- Connect the microphone (or two microphones) to the MIC IN 1 and/ or MIC IN 2 jack(s).

---

1 Set the KARAOKE ON/OFF switch on the VCR to ON.
The indicators around the MIC VOL 1, MIC VOL 2 and ECHO controls light up.

2 Insert a karaoke tape.
The VCR turns on automatically. The tape starts playing automatically if its safety tab has been removed.

3 Press ▷ PLAY to start playing.
If streaks appear during playback, select the colour system that the tape was recorded in. (See "To set the colour system" on page 13.)

4 Set the ON/OFF switch on the microphone to ON and sing into the microphone(s).

5 Turn the MIC VOL 1 and/or MIC VOL 2 control(s) to adjust the microphone volume.

6 Turn the ECHO control to adjust the strength of echo.
This applies the echo effect to both microphones.

Now you can enjoy playing karaoke.

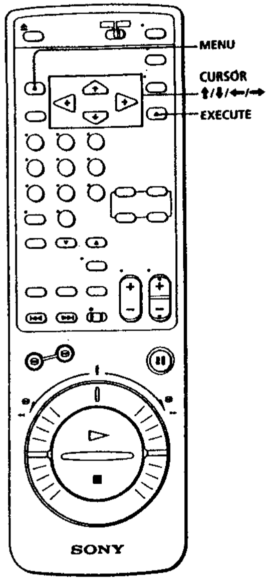
For optimum echo effect
Adjust the microphone volume to a little higher level than the music volume to obtain the best echo effect.

Tip

- When you sing along with TV broadcasts or music played back on equipment connected via the LINE IN jacks on the VCR, turn on the playback source, then follow steps 1 and 4-6.

Notes

- If the sound is reproduced through a stereo amplifier, turn down the volume of amplifier before operation.
- If the microphone volume is too high, the sound may be distorted.
- If feedback occurs, turn down the microphone volume or the sound volume of the TV, or move the microphone away from the speakers.



Playing a tape in a programmed order

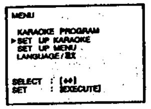
The VCR allows you to index and edit any tape, so that you can perform songs in the order you want.

Before you start...

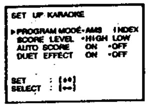
- Turn on the TV and tune in to the VCR.
- Set PROGRAM MODE according to the following steps.

---

1 Press MENU and select SET UP KARAOKE using CURSOR ↑/↓.



2 Press EXECUTE.
The SET UP KARAOKE menu appears.



3 Press CURSOR ↑/↓/←/→ to move the cursor (▶) to PROGRAM MODE and select AMS or INDEX by moving the dot (•), then press EXECUTE.

- If you use an index-compatible tape, select INDEX.
- If the tape is not index-compatible, or you are not sure of the tape type, select AMS.

The programme mode you set, INDEX or AMS, appears in the display window.

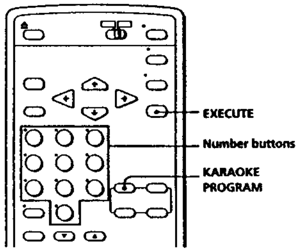
Tip

- AMS(Automatic Music Sensor) searches for blank spaces at least 4 seconds long between recorded tape segments. INDEX searches for index signals already recorded on the tape. Check the cassette box to see if a tape is index-compatible or not.

Note

- If there is excessive noise between the songs during AMS search, AMS search may not work properly and the selected song order may not be played correctly.

Karaoke sing-along
(continued)



Tips

- You can enter up to 10 songs, indexed from 1 to 99, on your custom karaoke list.
- You can also select KARAOKE PROGRAM menu by pressing MENU and CURSOR ↑/↓.

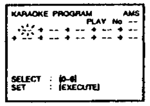
Notes

- If you set the KARAOKE ON/OFF switch to OFF, the list settings are cleared.
- When you use ⏻(on/standby), the VCR exits the KARAOKE PROGRAM mode.
- If you rewind past the beginning of the current song using a optional microphone with a linear rewind function, the selected song order may not be played correctly.
- During play back in KARAOKE PROGRAM mode, you can't change the programmed order. To change the order, press ■ STOP and repeat steps **2** to **4** .

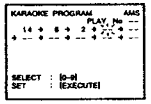
Operation

1 **Insert a tape and set the KARAOKE ON/OFF switch on the VCR to ON.**

2 **Press KARAOKE PROGRAM.**
The KARAOKE PROGRAM menu appears on the TV screen.



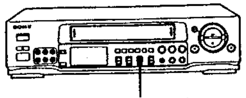
3 **Press the number buttons to select the song order you want.**
For single-digit numbers, first press "0" then the song number. If you press the wrong number, return to the field you want to correct and reenter the number.



4 **Press EXECUTE to start playing.**
The tape automatically rewinds to the beginning, and playback starts in the order you selected. While the VCR searches for a song, the song number flashes in the display window.

To stop playing
Press ■ STOP.

When you use ⏮/⏭ INDEX SEARCH in KARAOKE PROGRAM mode
The VCR rewind the tape to the beginning of the song being played back, or fast-forwards to the next song. You cannot search beyond the current song. When the VCR exits KARAOKE PROGRAM mode, ⏮ and ⏭ INDEX SEARCH returns to the normal function as described on page **17**.

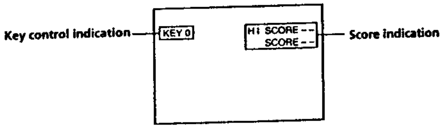


Notes

- Vocal reduction does not work with the following tapes:
  - Tapes on which different vocal sounds are recorded on the left and right channels, such as a duet.
  - Monaural recorded tapes
  - Tapes on which sound sources are recorded with strong echo-effects and/or chorus-effects.
- Vocal Assist does not work with the following tapes:
  - Hi-fi tapes on which a single sound is recorded on the left and right channels.
  - monaural recorded tapes.

Displaying the karaoke information

Press DISPLAY once when KARAOKE ON/OFF switch is set to ON. The karaoke information appears on the TV screen. When pressing DISPLAY twice, the remaining tape length and tape counter also appear.
To turn off the display, press DISPLAY again.



Reducing the vocals (Karaoke Pon)

This function reduces the vocals on the play back source media. You can enjoy singing with hi-fi stereo music video tapes or hi-fi stereo tapes on which music programmes have been recorded from TV.
Set the KARAOKE MODE switch to KARAOKE PON, which lowers the singer's voice.

To cancel the vocal reduction
Set the KARAOKE MODE switch to OFF.

Vocal Assist

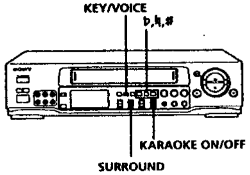
With this function you can make use of karaoke stereo hi-fi tapes. These tapes have only the accompaniment music on the left channel and the accompaniment plus the vocal on the right channel.
If you forget the words while singing and stop singing into the microphone, this function will automatically fill in the vocal for you using the recorded vocal.
Set the KARAOKE MODE switch to VOCAL ASSIST.

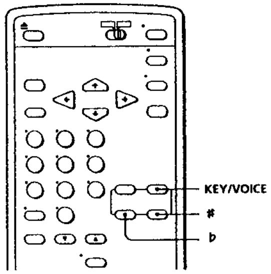
To cancel the vocal assist
Set the KARAOKE MODE switch to OFF.

Karaoke sing-along
(continued)

Note

- Before you use the KARAOKE MODE switch, the KARAOKE SURROUND switch, the buttons on the microphone, and the KEY CONTROL buttons, set the KARAOKE ON/OFF switch to ON.





Tip

- To change the pitch and repeat playback of songs via the microphone, use the F-KM1 microphone (not supplied). Connect the control plug of the microphone to the CONTROL jack on the front panel of the VCR. For details, consult your Sony service facility.

Surround Sound

You can use the karaoke surround sound effect to simulate two acoustic atmospheres.

Set the KARAOKE SURROUND switch to HALL to simulate the acoustic of a large concert hall. Set the KARAOKE SURROUND switch to KARAOKE BAR to simulate the acoustic of a small room.

To cancel the surround sound effect

Set the KARAOKE SURROUND switch to OFF.

Changing the pitch (Key Control)

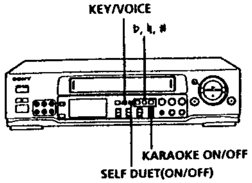
While you are singing, you can change the pitch of your voice or the song so they are in tune.

1 Set the KARAOKE ON/OFF switch to ON.
2 Press KEY/VOICE.
With each press, the VOICE/KEY indicator in the display window toggles between "VOICE" and "KEY".

To change the pitch of the song, select KEY.
To change the pitch of your voice, select VOICE.

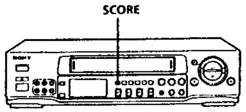
3 Press one of the KEY CONTROL buttons repeatedly to set the pitch you want. You can change the pitch of the song in half note intervals and your voice in whole note intervals. The pitch you set appears on the VCR display.

To	Press	Range		Display indicator
		KEY	VOICE	
raise the pitch	♯(sharp)	7 half notes	7 notes	"♯1" to "♯7"
reset the default pitch	♮(natural) on the VCR	—	—	"0"
lower the pitch	♭(flat)	7 half notes	7 notes	"♭1" to "♭7"



Note

- You cannot change the pitch of a song while in SELF DUET mode. If you press KEY/VOICE in SELF DUET mode, the KEY indicator lights and the Self Duet function does not work. To go back to SELF DUET mode, press KEY/VOICE again.
- Duet Effect is effective when the interval of the harmony ranges from ♭4 to ♭4.



Notes

- The highest possible score is 99 points. Scores over 90 flash.
- The score is also displayed on the VCR. The highest score flashes when you improve on it. When you get over 90 points without improving on the high score, "GOOD" appears and your score flashes.
- When you press DISPLAY, the score appears on the TV screen.
- The highest score is cleared each time you set the KARAOKE ON/OFF switch to OFF.
- Even in Auto Score mode you can get the score at any time by pressing SCORE.
- The result of grading is not absolute or exclusive. Please use this function just for amusement.

Self Duet

You can sing duets by yourself. The VCR creates a harmony voice for your vocal at an interval set with the key control.

1 Set the KARAOKE ON/OFF switch to ON.
2 Press KEY/VOICE to light the VOICE indicator in the display window.
3 Press SELF DUET.
The S.D indicator lights. "DUET" appears on the TV screen.

4 Press ♯(sharp) or ♭(flat) to set the interval of the harmony.
As you sing the melody, the VCR produces a harmony voice at the set interval. To change the pitch, see "Changing the pitch" on page 22.

To cancel Self Duet

Press SELF DUET so that the S.D indicator goes off. The VCR saves the last pitch you selected. To return to the default pitch, press ♮(natural) on the VCR.

To improve Duet Effect

You can set the VCR to add vibrato to the harmonized voice when the duet is not in harmony. Press MENU and select SET UP KARAOKE, then set DUET EFFECT to ON.

Grading karaoke singing

As an extra challenging the VCR can grade your singing.

1 Start singing and press SCORE.
The SCORE indications light up on the TV screen. The VCR starts to analyse your singing.
2 Press SCORE again after singing for more than one minute.
Your score appears on the TV screen for five seconds. The highest score (High Score) is saved and is also indicated above your present score.

HI SCORE
SCORE

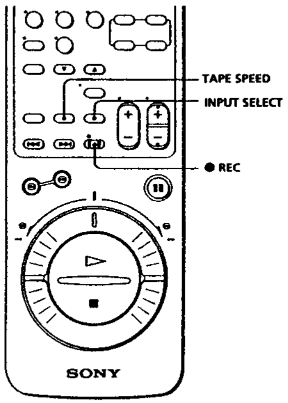
To score automatically (Auto Score)

The VCR automatically scores each song in order in KARAOKE PROGRAM mode. Press MENU and select SET UP KARAOKE, then set AUTO SCORE to ON. Each time the song ends, the score appears for five seconds.

To set score level

You can select either strict grading or easy grading by setting the score level. Press MENU and select SET UP KARAOKE, then set SCORE LEVEL to HIGH or LOW.

Recording TV programmes



Tips
- To cut out an unwanted scene while recording, press ❚❚ PAUSE, turn the DUAL MODE SHUTTLE ring on the VCR to rewind the tape to the beginning of the unwanted scene, then press ❚❚ PAUSE to resume recording.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.

Notes
- If you insert a tape with its safety tab removed, the VCR starts playing. To record on this tape, cover the tab hole.
- If you've inserted a tape with its safety tab removed, the VCR ejects it when you press ●REC.

When your TV is equipped with audio/video output jacks, you can record a programme showing on the TV.

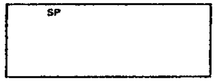
Before you start
- Connect the LINE IN 1 jacks of the VCR to the audio/video output jacks of your TV. (See "Additional connection" on page 7.)
- Make sure that CONNECT L1 on the menu option is set to TV.

1 **Turn on your TV and select the TV channel you want to record.**

2 **Press INPUT SELECT to light the LINE 1 indicator in the display window.**

3 **Insert a tape with its safety tab in place.**

4 **Select the tape speed, SP (standard play), LP (long play) or EP (extended play), by pressing TAPE SPEED.**
See "To select tape speeds" on the next page.



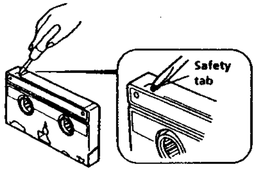
5 **Start recording by pressing ● REC.**
During recording, do not change the TV channel or turn off the TV. When the tape reaches the end, the VCR automatically rewinds it to the beginning.

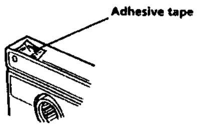
To stop recording
Press ■ STOP.

Saving a recording

Video tapes have a safety tab to protect against accidental recording. To prevent accidental erasure of a recording, break off the safety tab with a screwdriver or other tool. A tape with its safety tab removed is ejected if you try to record on it.

To record on a tape with its safety tab removed, cover the tab hole with adhesive tape.





To select tape speeds

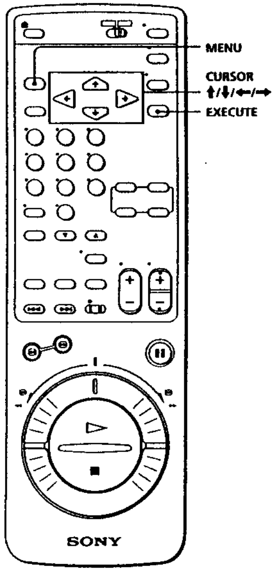
PAL colour system
When recording, select either SP or LP. LP provides recording time twice as long as SP. However, SP provides better picture quality. You can mix SP and LP on the same tape. When playing back, the VCR automatically detects the tape speed. See the table below for the maximum recording/playback time in each speed.

Tape type	**Maximum recording/playback time**	
	SP	**LP**
E-300	5 hrs.	10 hrs.
E-240	4 hrs.	8 hrs.
E-180	3 hrs.	6 hrs.
E-120	2 hrs.	4 hrs.
E-60	1 hr.	2 hrs.

NTSC colour system
When recording , select either SP (standard play) or EP (extended play). EP provides recording time three times as long as SP. However, SP provides better picture quality. You can mix SP and EP on the same tape. When playing back, the VCR automatically detects the tape speed. See the table below for the maximum recording/playback time in each speed.

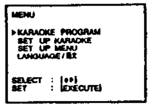
Tape type	**Maximum recording/playback time**	
	SP	**EP**
T-160	2 hrs. 40 min.	8 hrs.
T-120	2 hrs.	6 hrs.
T-60	1 hr.	3 hrs.
T-30	30 min.	1 hr. 30 min.

Looking at menu options

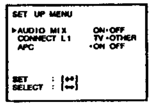

MENU
CURSOR ↑/↓/←/→
EXECUTE
SONY

The SET UP MENU provides you with various options to set up and customize your VCR. See the table below for the available menu choices. Initial settings are indicated in bold letters.

1 **Press MENU.**
The main MENU appears on the TV screen.


MENU
▶KARAOKE PROGRAM
SET UP KARAOKE
SET UP MENU
LANGUAGE/言語
SELECT : [↑↓]
SET : [EXECUTE]

2 **Press CURSOR ↑/↓ to move the cursor (▶) to SET UP MENU, then press EXECUTE.**
The SET UP MENU appears.


SET UP MENU
▶AUDIO MIX ON·OFF
CONNECT L1 TV·OTHER
APC ·ON OFF
SET : [↑↓]
SELECT : [←→]

3 **Press CURSOR ↑/↓ to move the cursor (▶) to the desired menu choice.**

4 **Set the item to the desired setting using CURSOR ←/→.**

5 **Press EXECUTE to return to the original screen.**

Menu choices

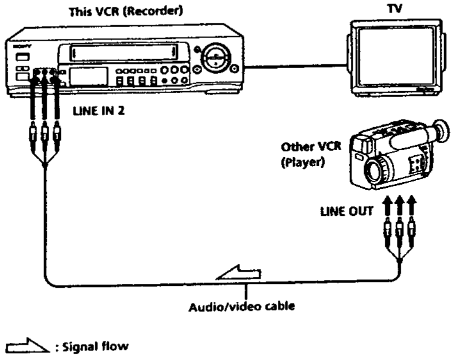
Menu option	Set this option to
AUDIO MIX	• ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button becomes inoperable. • **OFF** to select the sound using the AUDIO MONITOR button. For details, see page 14.
CONNECT L1	• TV to record TV programmes using the LINE IN 1 jacks. • **OTHER** to record other audio/video sources using the LINE IN 1 jacks. For details, see page 7.
APC	• **ON** to activate the APC (Adaptive Picture Control). • OFF to deactivate it. For details, see page 16.

Editing

Editing with another VCR

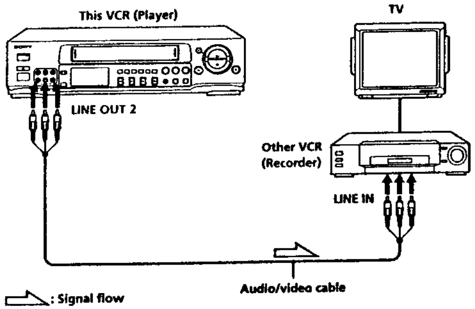
This section shows you how to edit to or from another VCR or camcorder. You can make a copy of a tape using this VCR for recording or playback.

How to hook up to record on this VCR


This VCR (Recorder)
TV
LINE IN 2
Other VCR (Player)
LINE OUT
Audio/video cable
: Signal flow

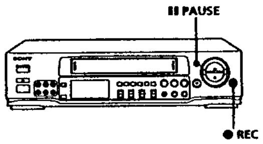
Tips
- To connect another equipment, you can use LINE IN 1 on the rear of this VCR as well if you are not using LINE IN 1 to connect the VCR. In this case, press INPUT SELECT to display "LINE 1" in the display window.
- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.

How to hook up to record on another VCR


This VCR (Player)
TV
LINE OUT 2
Other VCR (Recorder)
LINE IN
Audio/video cable
: Signal flow

Tips
- To connect another equipment, you can use LINE OUT 1 on the rear of this VCR as well if you are not using LINE OUT 1 to connect the VCR.
- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.

Editing with another VCR
(continued)



Tips
- To make your editing more precise, use the pause buttons on both VCRs.
- To cut out unwanted scenes while editing, press II PAUSE on this VCR when an unwanted scene begins. When it ends, press II PAUSE again to resume recording (Assemble Editing).

Operation (when recording on this VCR)

Before you start…
- Press INPUT SELECT to display "LINE 2" in the display window.
- Press TAPE SPEED to select the recording tape speed (SP/LP/EP).

1 **Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.**

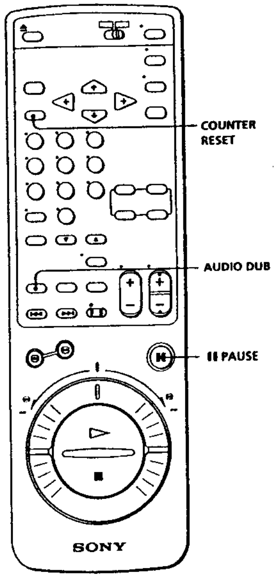
2 **Insert a tape into this (recording) VCR. Search for the point to start recording and press II PAUSE.**

3 **Press ● REC on this VCR and set it to recording pause.**

4 **To start editing, press the II PAUSE buttons on both VCRs to release the VCRs from pause.**
For best results, press the pause button on the other VCR before pressing II PAUSE on this VCR.

To stop editing
Press the ■ STOP buttons on both VCRs.

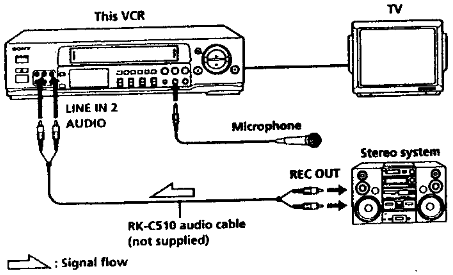
Audio dubbing



Note
- You must be in playback pause mode before pressing AUDIO DUB. (If you are in recording pause mode, you cannot use the audio dubbing function.)

You can add music or narration on the normal audio track. The monaural sound previously recorded is replaced while the original picture and hi-fi sound on the main track are retained. (See page 14.)

How to hook up



Audio dubbing from a stereo system

Before you start editing
- Connect audio source equipment to the LINE IN 2 AUDIO jacks of this VCR.
- Press INPUT SELECT to display "LINE 2" in the display window.
- Make sure that the KARAOKE ON/OFF switch on the VCR is set to OFF.

1 **Play a recording source. Search for the point to start playback and set it to playback pause.**

2 **Insert the prerecorded tape into this VCR. Search for the end of the section you want to dub new sound to and press II PAUSE.**
Make sure that the tape has its safety tab in place so that you can dub new sound onto it.

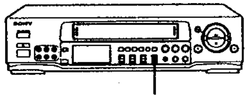
3 **Press COUNTER RESET on this VCR to reset the counter to "0:00:00."**

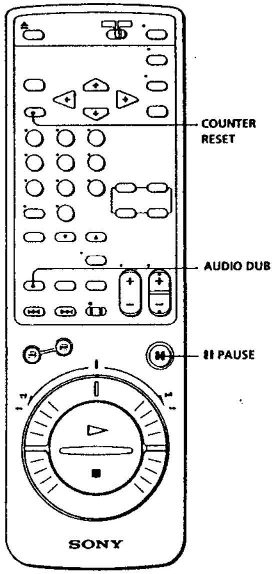
4 **Rewind the tape to the beginning of the section.**
This VCR pauses.

5 **Press AUDIO DUB.**
The A-DUB(audio dubbing) indicator lights up on the VCR.

6 **To start editing, simultaneously press the II PAUSE buttons on this VCR and the stereo system.**
When the counter of this VCR reaches "0:00:00," audio dubbing stops automatically.

Audio dubbing (continued)





Tip
- When dubbing from the microphone, you can use the functions of echo effect, key control and Self Duet.

Note
- Do not dub on a tape recorded in LP mode. Audio noise may occur.

Tip
- To listen to the sounds recorded on the hi-fi audio and normal audio tracks at the same time, set AUDIO MIX to ON using the SET UP MENU option. (See page 14.)

To stop editing
Press the ■ STOP buttons on this VCR and the stereo system.

Audio dubbing from the microphone

Using the microphone you can add songs or narration on a recorded tape. Sound from the microphone is recorded on the normal audio track, mixed with hi-fi sound on the main track.

Before you start editing
- Connect the microphone(s) to the MIC IN 1 and/or 2 jack(s) and turn on the microphone(s).

1 **Set the KARAOKE ON/OFF switch on the VCR to ON.**

2 **Insert the prerecorded tape into the VCR. Search for the end of the section you want to dub new sound to and press II PAUSE.**
Make sure that the tape has its safety tab in place so that you can dub new sound onto it.

3 **Press COUNTER RESET to reset the counter to "0:00:00."**

4 **Rewind the tape to the beginning of the section.**
The VCR pauses.

5 **Press AUDIO DUB.**
The A-DUB indicator lights up on the VCR.

6 **Press II PAUSE on the VCR to start dubbing and sing or speak into the microphone.**
When the counter of the VCR reaches "0:00:00," audio dubbing stops automatically.

To stop editing
Press ■ STOP.

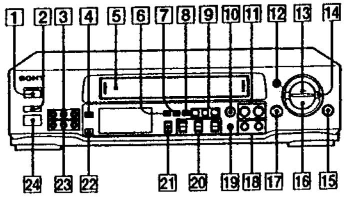
Listening to the dubbing sound

When playing an audio-dubbing tape, you have a choice of listening sound. To listen to the dubbing sound, press AUDIO MONITOR to select standard sound. (See page 14.)

Index to parts and controls

Refer to the pages indicated in ( ) for details.

Front panel



1 ON/STANDBY switch/indicator

2 ≙ EJECT button

3 LINE IN 2 jacks (27)

4 INPUT SELECT button

5 Tape compartment

6 SCORE button (23)

7 KEY/VOICE button (22, 23)

8 SELF DUET (ON/OFF) button (23)

9 KEY CONTROL (♭, ♮, ♯) buttons (22, 23)

10 ECHO control (18)

11 MIC VOL 1/2 controls (18)

12 II PAUSE button (28)

13 ▷PLAY button (15)

14 DUAL MODE SHUTTLE ring (15)

15 ● REC (recording) button/indicator (28)

16 ■ STOP button

17 A-DUB (audio dubbing) indicator (29, 30)

18 MIC IN 1/2 jacks (18)

19 CONTROL jack (22)

20 KARAOKE switches
SURROUND switch (22)
MODE switch (21)
ON/OFF switch (18)

21 COLOR SYSTEM switch (13)

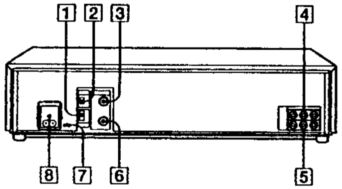
22 TAPE SPEED button (24)

23 LINE OUT 2 jacks (27)

24 Remote sensor (6)

Index to parts and controls
(continued)

Rear panel



1 TV SYSTEM switch (10)

2 RF CHANNEL screw (10)

3 AERIAL OUT connector (8)

4 LINE IN 1 jacks (7)

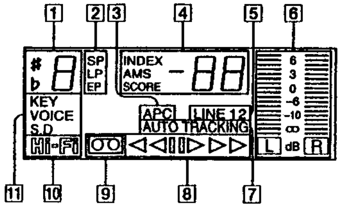
5 LINE OUT 1 jacks (7)

6 AERIAL IN connector (8)

7 NTSC PB switch (13)

8 AC IN connector (7, 8)

Display window


1
2
3
4
5
6
#
♭
SP
LP
EP
INDEX
AMS
SCORE
-88
KEY
VOICE
S.D
APC
LINE 12
AUTO TRACKING
6
3
0
-6
-10
∞
Hi-Fi
L
dB
R
11
10
9
8
7

1 Key indicators (22, 23)

2 Tape speed indicators (24)

3 APC indicator (16)

4 Index search/Karaoke programme/SCORE indicators (17, 20, 23)

5 Line indicator (24)

6 Audio channel/sound level indicator (14)

7 AUTO TRACKING indicator (16)

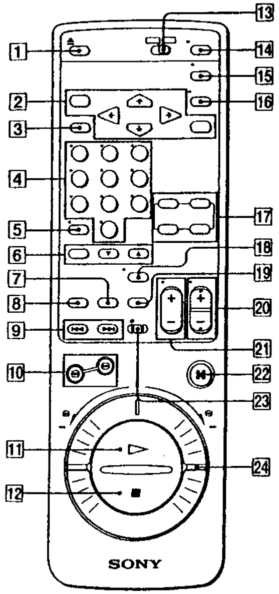
8 Tape operating indicators

9 Tape indicator

10 Hi-fi indicator

11 KEY/VOICE/S.D(Self duet) indicators (22, 23)

Remote commander


1
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21
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23
24
SONY

1 ≜ EJECT button (12)

2 Menu buttons
MENU button
CURSOR ↑/↓/←/→ buttons
EXECUTE button

3 COUNTER RESET button (13)

4 Number buttons (20)

5 -/-- (ten's digit) button (20)

6 TRACKING buttons (16)
AUTO/MANUAL button
▼/▲ TRACKING
NORMAL/SLOW STILL ADJUST buttons

7 TAPE SPEED button (24)

8 AUDIO DUB button (29, 30)

9 ⏮/⏭ INDEX SEARCH buttons (17)

10 ⊕/⊖ SEARCH buttons (15)

11 ▷ PLAY button (12)

12 ■ STOP button (12)

13 TV/ VTR remote control switch (6)

14 ⏻ (on/standby) button (9)

15 TV/VIDEO button

16 AUDIO MONITOR button (14)

17 KARAOKE buttons
PROGRAM button (20)
KEY/VOICE button (22, 23)
♭(flat) button (22, 23)
#(sharp) button (22, 23)

18 DISPLAY button (13, 21)

19 INPUT SELECT button (24)

20 PROG (programme) +/– button

21 VOL (volume) +/– button

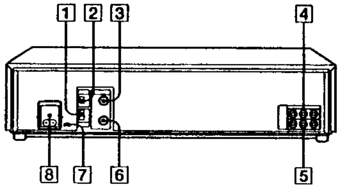
22 ❚❚ PAUSE button (12)

23 ● REC button (24)

24 DUAL MODE SHUTTLE ring (12, 15)

Index to parts and controls
(continued)

Rear panel



1 TV SYSTEM switch (10)

2 RF CHANNEL screw (10)

3 AERIAL OUT connector (8)

4 LINE IN 1 jacks (7)

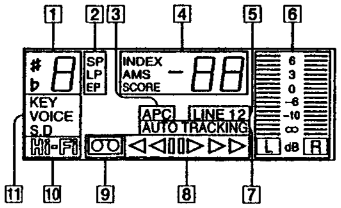
5 LINE OUT 1 jacks (7)

6 AERIAL IN connector (8)

7 NTSC PB switch (13)

8 AC IN connector (7, 8)

Display window


1
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LP
EP
INDEX
AMS
SCORE
KEY
VOICE
S.D
APC
LINE 12
AUTO TRACKING
6
3
0
-6
-10
∞
L
dB
R
Hi-Fi
11
10
9
8
7

1 Key indicators (22, 23)

2 Tape speed indicators (24)

3 APC indicator (16)

4 Index search/Karaoke programme/SCORE indicators (17, 20, 23)

5 Line indicator (24)

6 Audio channel/sound level indicator (14)

7 AUTO TRACKING indicator (16)

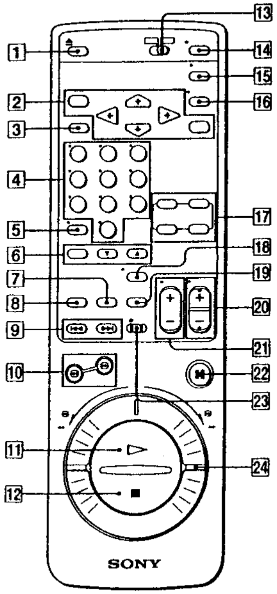
8 Tape operating indicators

9 Tape indicator

10 Hi-fi indicator

11 KEY/VOICE/S.D(Self duet) indicators (22, 23)

Remote commander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21
22
23
24
SONY

1 ≜ EJECT button (12)

2 Menu buttons
  MENU button
  CURSOR ↑/↓/←/→ buttons
  EXECUTE button

3 COUNTER RESET button (13)

4 Number buttons (20)

5 -/-- (ten's digit) button (20)

6 TRACKING buttons (16)
  AUTO/MANUAL button
  ▼/▲ TRACKING
  NORMAL/SLOW STILL
  ADJUST buttons

7 TAPE SPEED button (24)

8 AUDIO DUB button (29, 30)

9 ⏮/⏭ INDEX SEARCH buttons (17)

10 ⊖/⊕ SEARCH buttons (15)

11 ▷ PLAY button (12)

12 ■ STOP button (12)

13 TV/ VTR remote control switch (6)

14 ⏻ (on/standby) button (9)

15 TV/VIDEO button

16 AUDIO MONITOR button (14)

17 KARAOKE buttons
  PROGRAM button (20)
  KEY/VOICE button (22, 23)
  ♭(flat) button (22, 23)
  ♯(sharp) button (22, 23)

18 DISPLAY button (13, 21)

19 INPUT SELECT button (24)

20 PROG (programme) +/– button

21 VOL (volume) +/– button

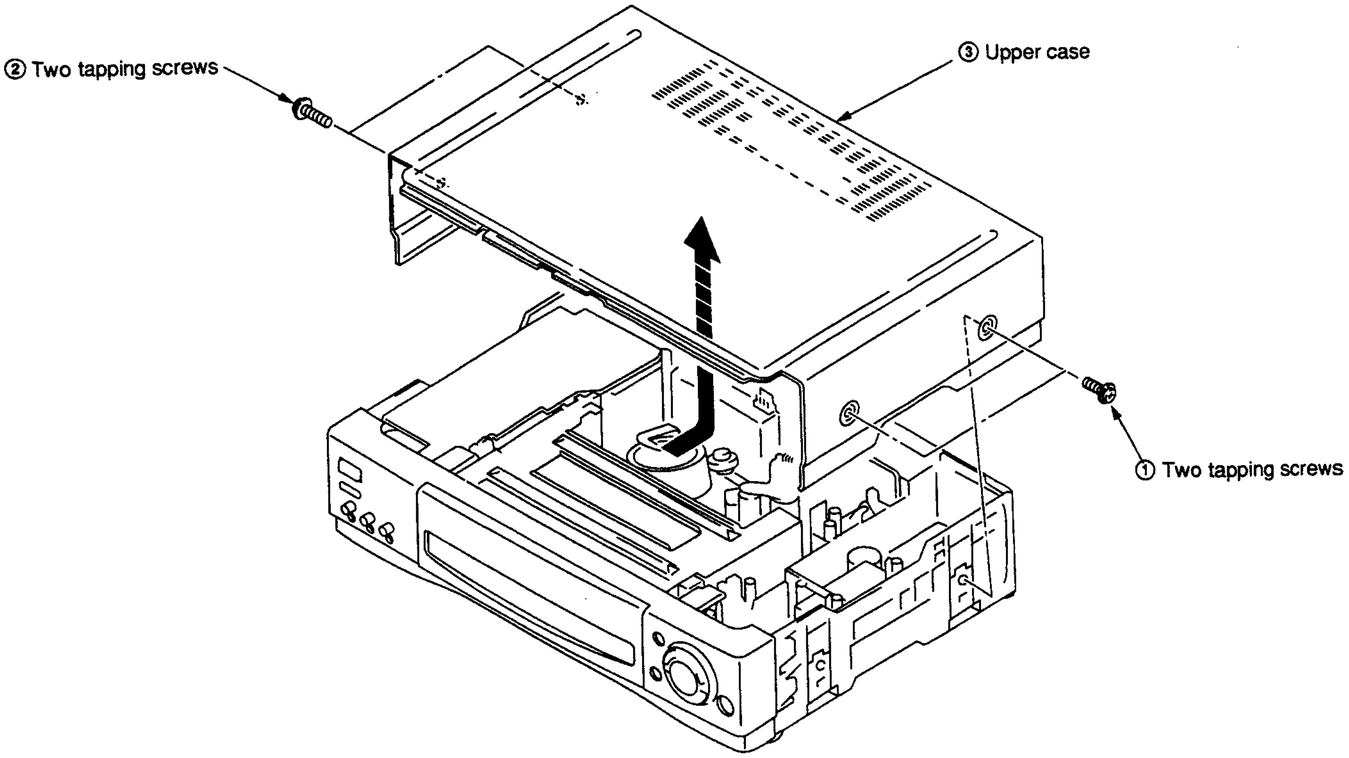
22 ❚❚ PAUSE button (12)

23 ● REC button (24)

24 DUAL MODE SHUTTLE ring (12, 15)

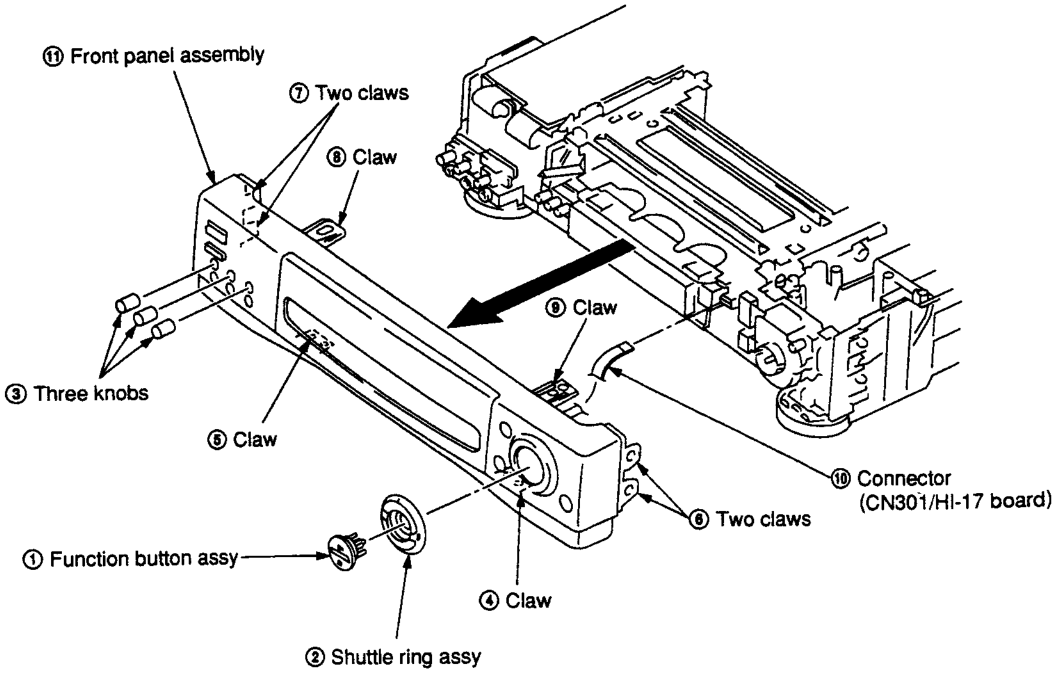
SECTION 2
DISASSEMBLY

2-1. REMOVAL OF UPPER CASE

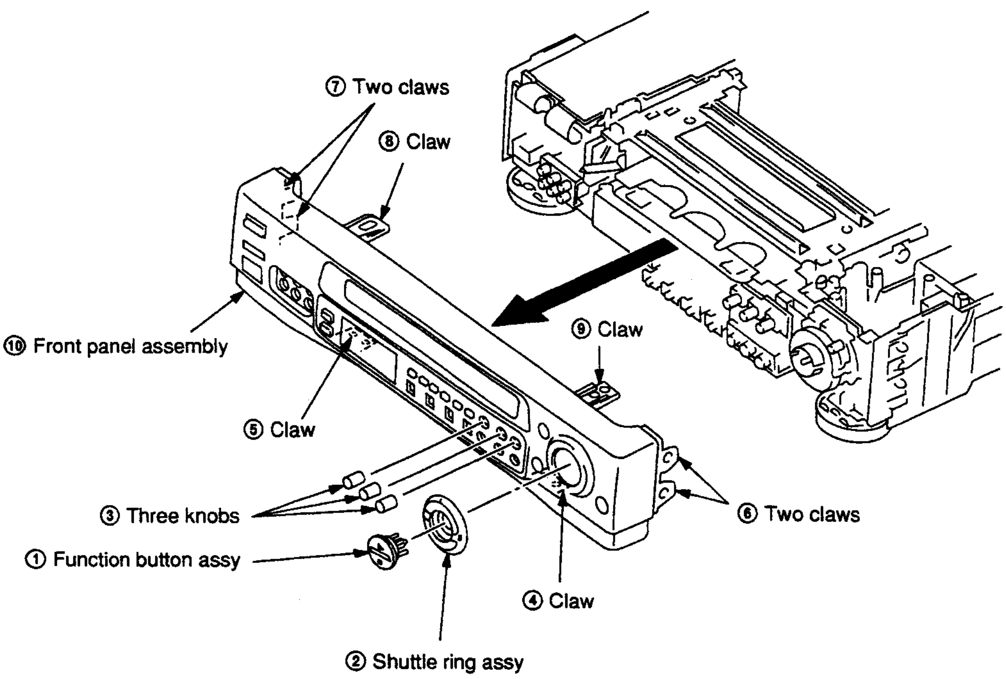

② Two tapping screws
③ Upper case
① Two tapping screws

2-2. REMOVAL OF FRONT PANEL ASSEMBLY

2-2-1. SLV-K862CH/K862PS/K872MN/K872PS MODEL

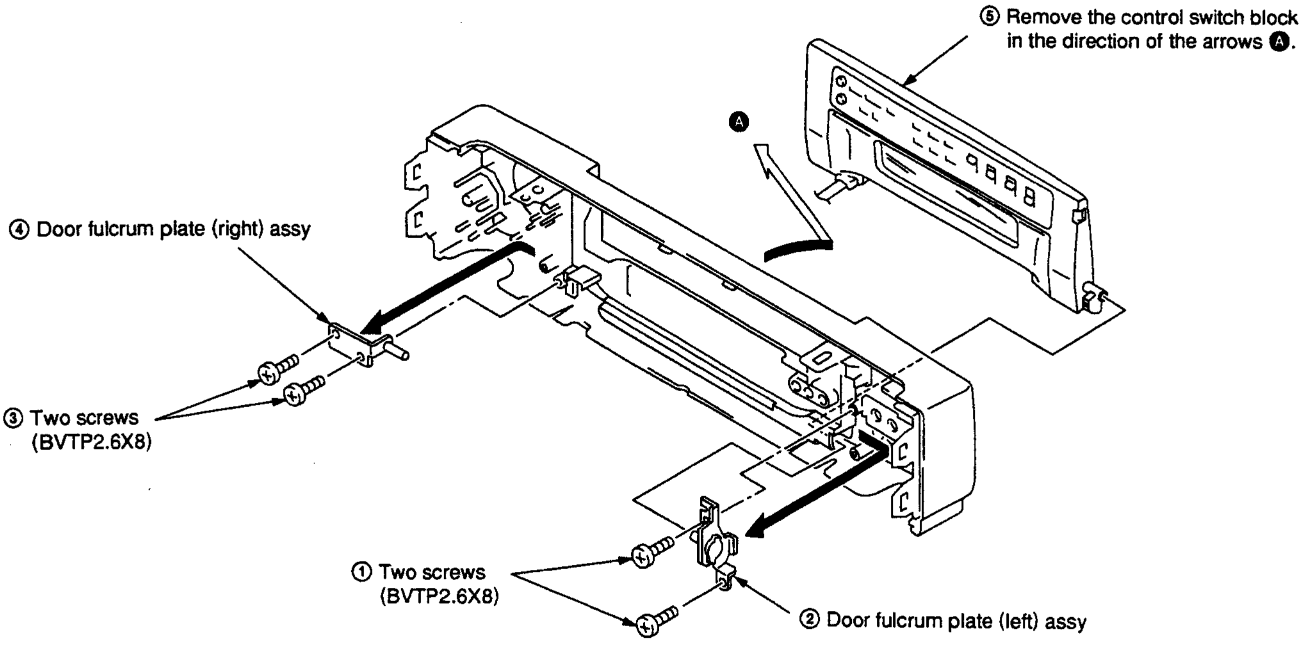

⑪ Front panel assembly
⑦ Two claws
⑧ Claw
⑨ Claw
③ Three knobs
⑤ Claw
⑩ Connector (CN301/HI-17 board)
⑥ Two claws
① Function button assy
④ Claw
② Shuttle ring assy

2-2-2. SLV-KH3CH/KH3ME/KH3PS MODEL


⑦ Two claws
⑧ Claw
⑩ Front panel assembly
⑨ Claw
⑤ Claw
③ Three knobs
⑥ Two claws
① Function button assy
④ Claw
② Shuttle ring assy

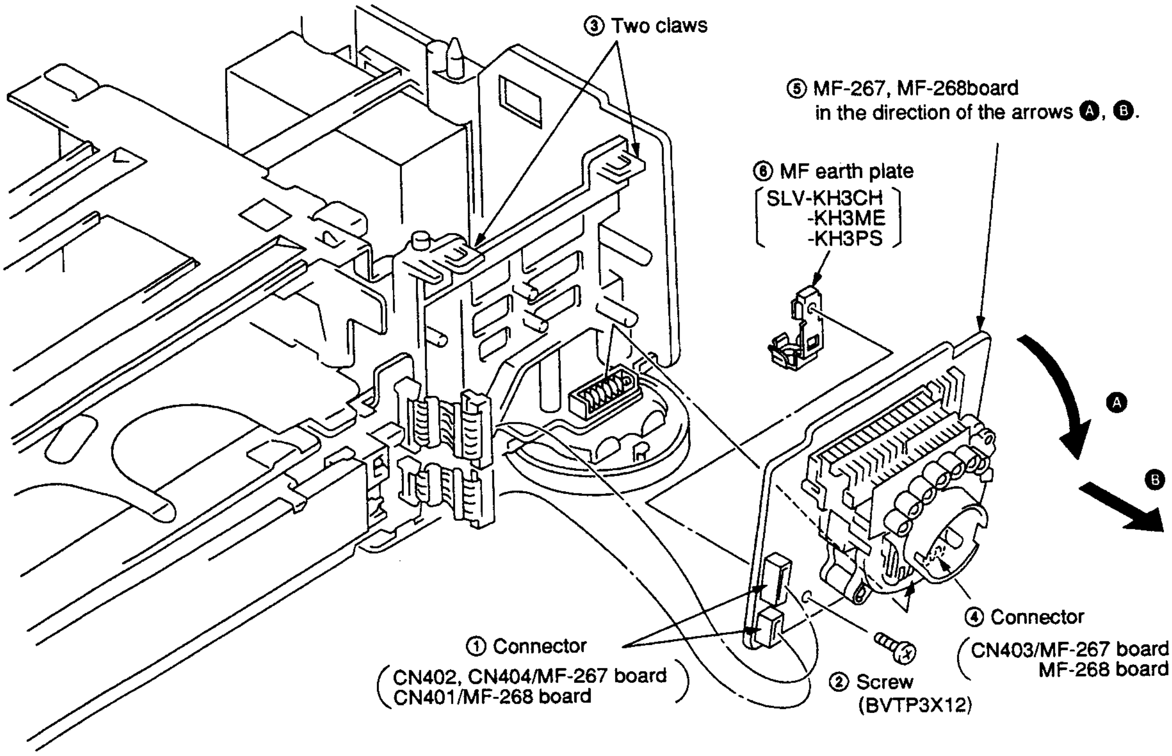
2-3. REMOVAL OF CONTROL SWITCH BLOCK

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


⑤ Remove the control switch block in the direction of the arrows Ⓐ.
Ⓐ
④ Door fulcrum plate (right) assy
③ Two screws (BVTP2.6X8)
① Two screws (BVTP2.6X8)
② Door fulcrum plate (left) assy

2-4. REMOVAL OF MF-267, MF-268 BOARD

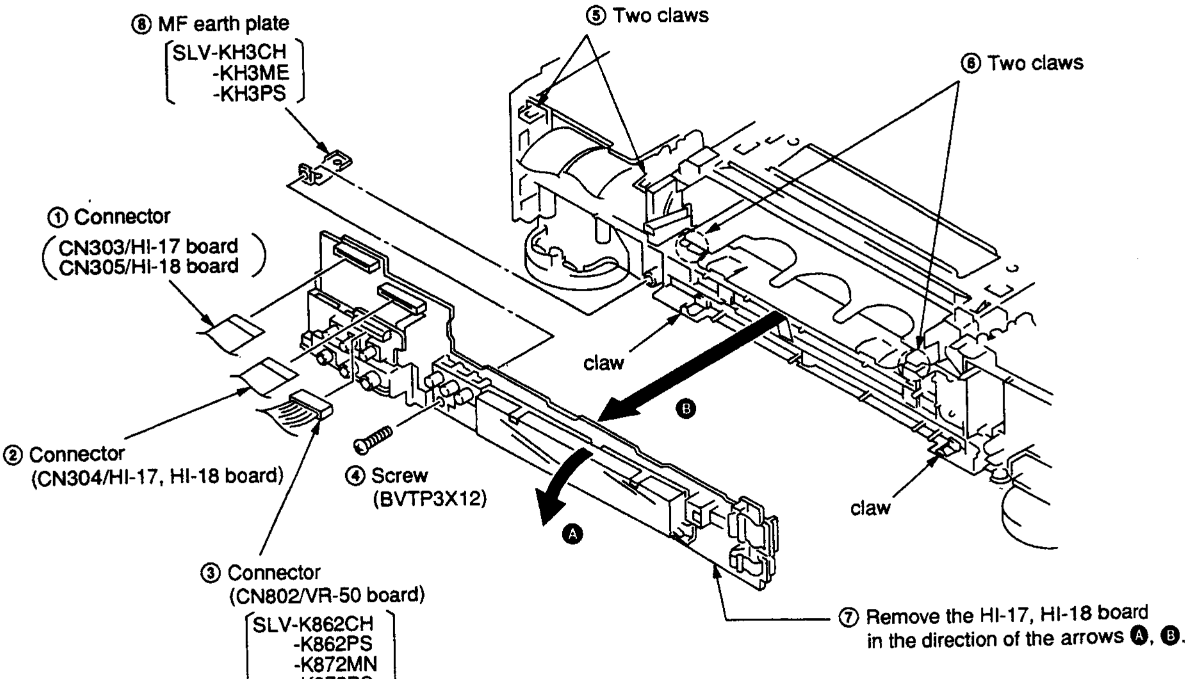
MF-267 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL
MF-268 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL



③ Two claws
⑤ MF-267, MF-268board in the direction of the arrows ❹, ❺.
⑥ MF earth plate
SLV-KH3CH
-KH3ME
-KH3PS
❹
❺
④ Connector
CN403/MF-267 board
MF-268 board
① Connector
CN402, CN404/MF-267 board
CN401/MF-268 board
② Screw
(BVTP3X12)

2-5. REMOVAL OF HI-17, HI-18 BOARD

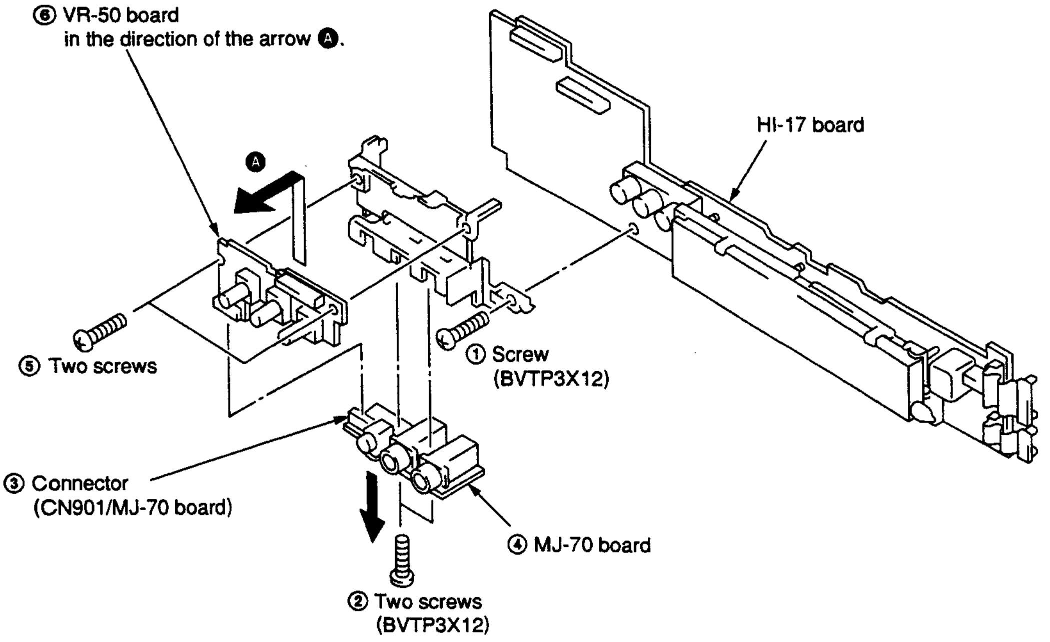
HI-17 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL
HI-18 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL



⑧ MF earth plate
SLV-KH3CH
-KH3ME
-KH3PS
⑤ Two claws
⑥ Two claws
① Connector
CN303/HI-17 board
CN305/HI-18 board
claw
❺
② Connector
(CN304/HI-17, HI-18 board)
④ Screw
(BVTP3X12)
❹
claw
③ Connector
(CN802/VR-50 board)
SLV-K862CH
-K862PS
-K872MN
-K872PS
⑦ Remove the HI-17, HI-18 board in the direction of the arrows ❹, ❺.

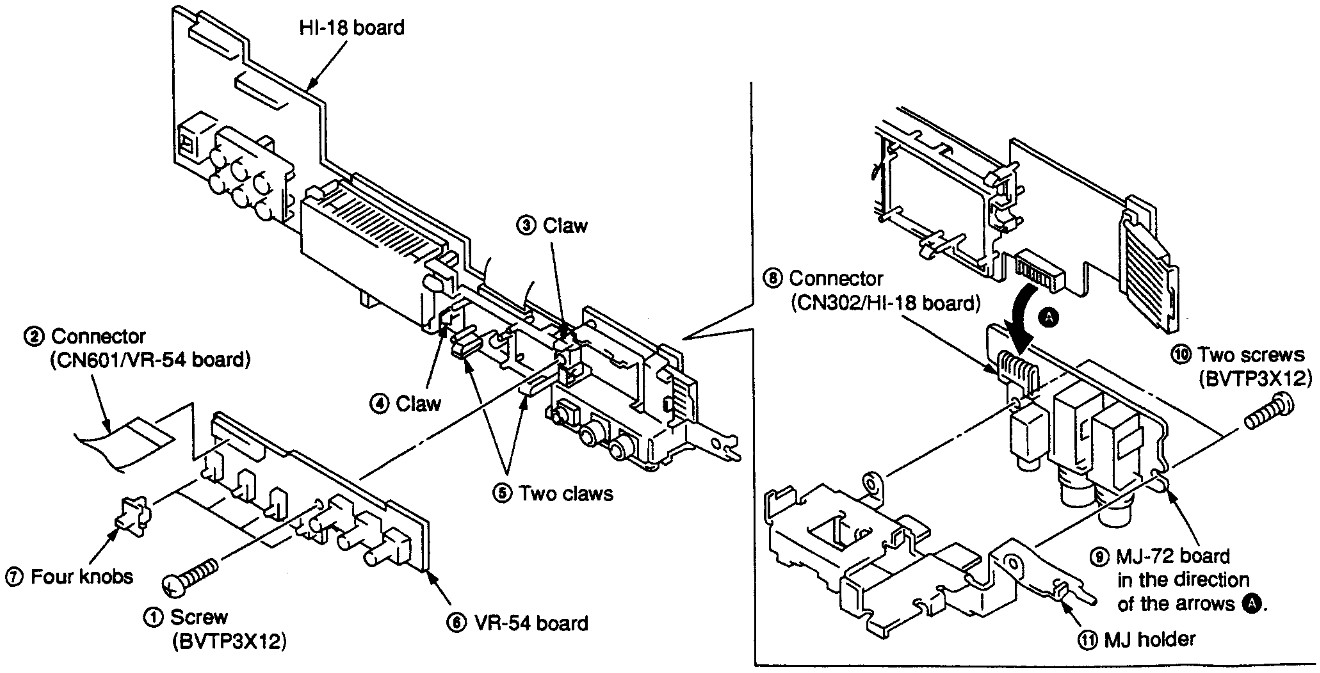
2-6. REMOVAL OF VR-50, MJ-70 BOARD

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


⑥ VR-50 board
in the direction of the arrow Ⓐ.
Ⓐ
HI-17 board
⑤ Two screws
① Screw
(BVTP3X12)
③ Connector
(CN901/MJ-70 board)
④ MJ-70 board
② Two screws
(BVTP3X12)

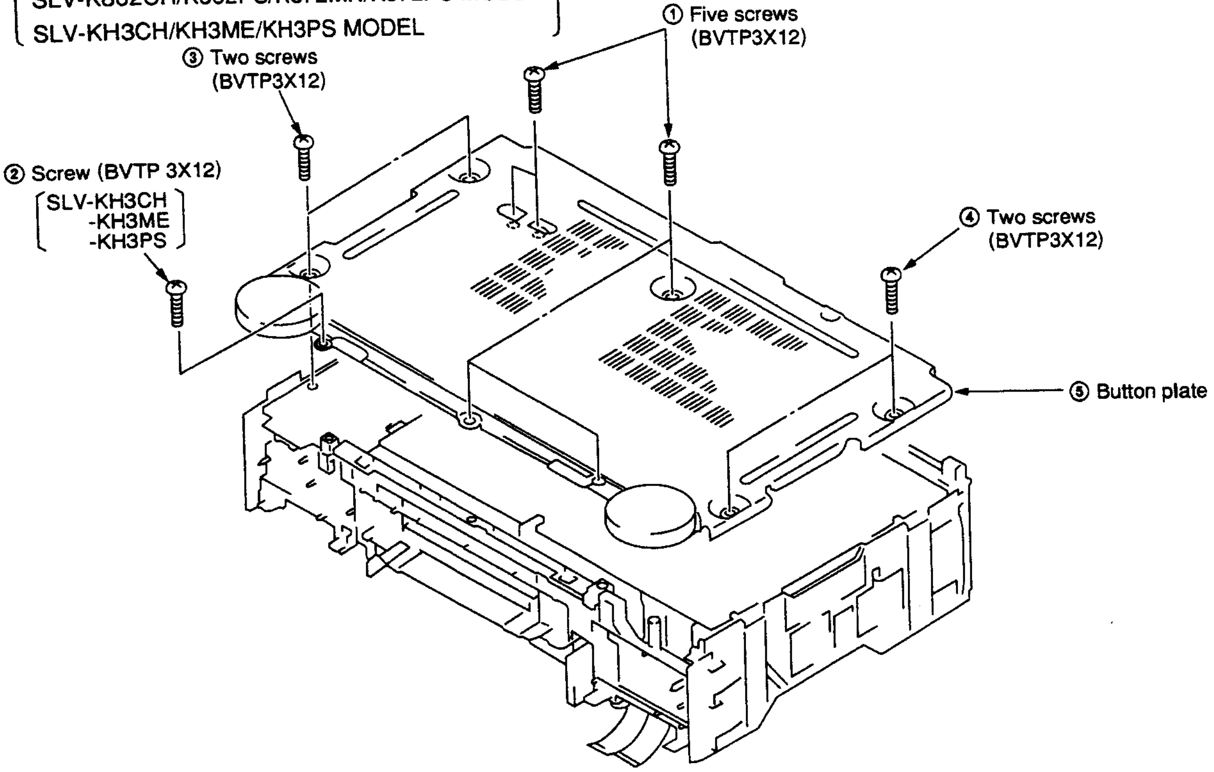
2-7. REMOVAL OF VR-54, MJ-72 BOARD

(SLV-KH3CH/KH3ME/KH3PS MODEL)


HI-18 board
③ Claw
⑧ Connector
(CN302/HI-18 board)
Ⓐ
⑩ Two screws
(BVTP3X12)
② Connector
(CN601/VR-54 board)
④ Claw
⑤ Two claws
⑦ Four knobs
① Screw
(BVTP3X12)
⑥ VR-54 board
⑨ MJ-72 board
in the direction
of the arrows Ⓐ.
⑪ MJ holder

2-8. REMOVAL OF BOTTOM PLATE

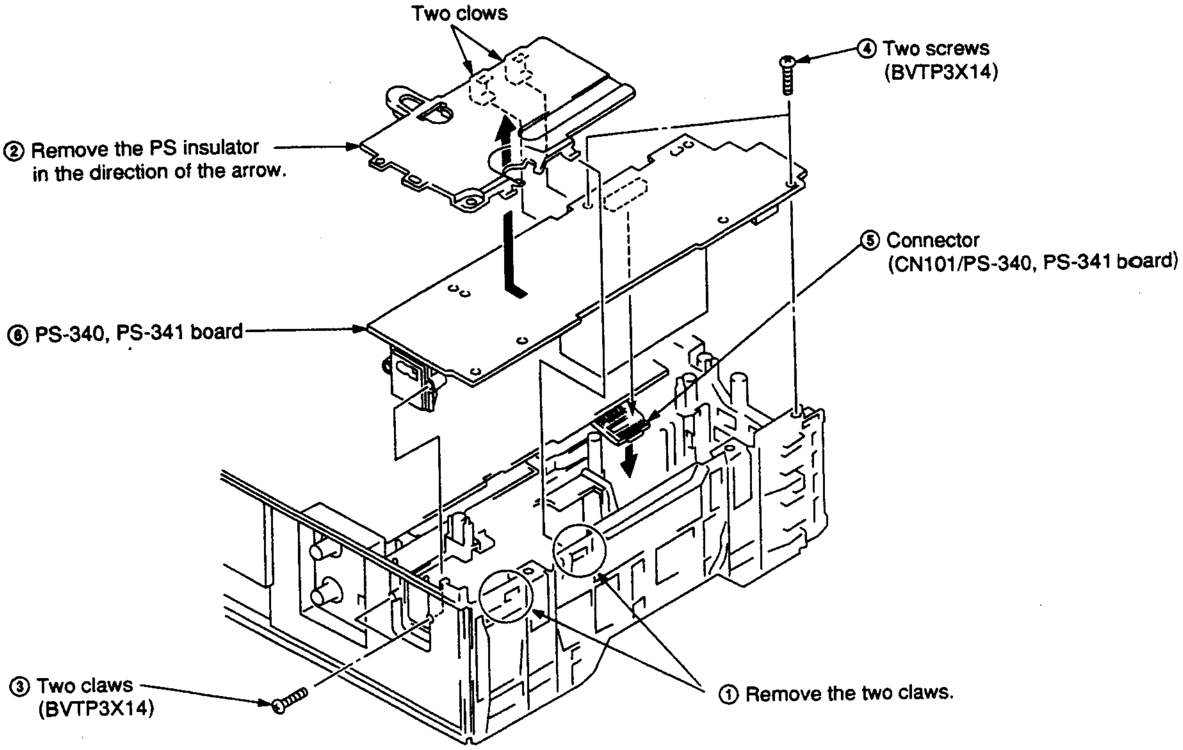
(SLV-K862CH/K862PS/K872MN/K872PS MODEL)
(SLV-KH3CH/KH3ME/KH3PS MODEL)



③ Two screws (BVTP3X12)
① Five screws (BVTP3X12)
② Screw (BVTP 3X12)
SLV-KH3CH
-KH3ME
-KH3PS
④ Two screws (BVTP3X12)
⑤ Button plate

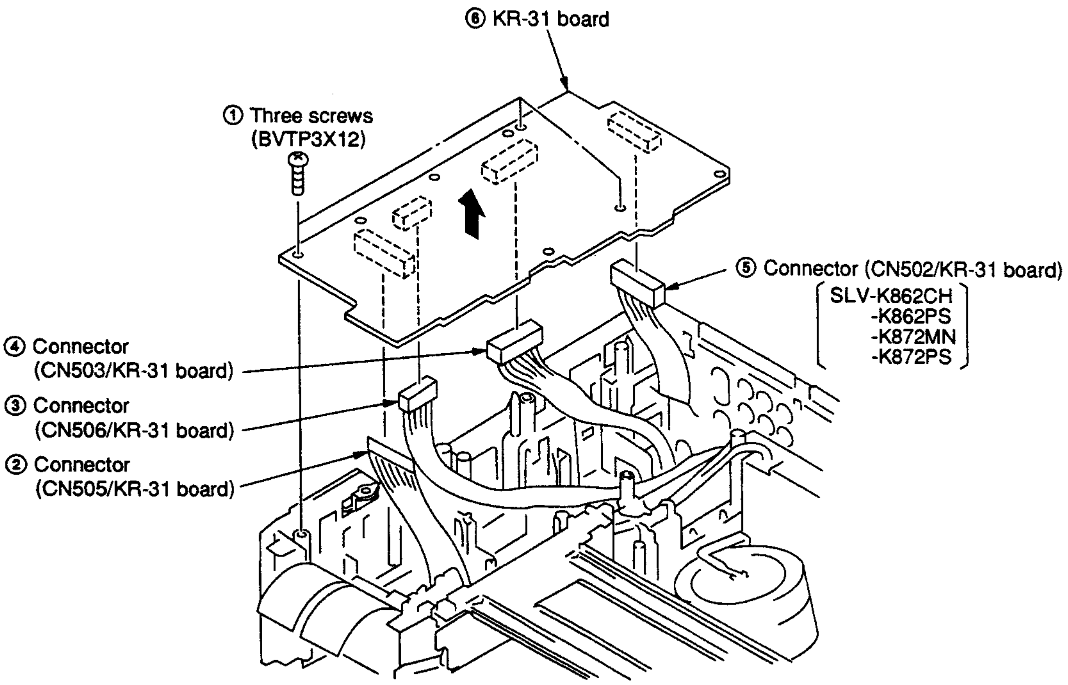
2-9. REMOVAL OF PS-340, PS-341 BOARD

(PS-340 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL)
(PS-341 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL)



Two clows
④ Two screws (BVTP3X14)
② Remove the PS insulator in the direction of the arrow.
⑤ Connector (CN101/PS-340, PS-341 board)
⑥ PS-340, PS-341 board
③ Two claws (BVTP3X14)
① Remove the two claws.

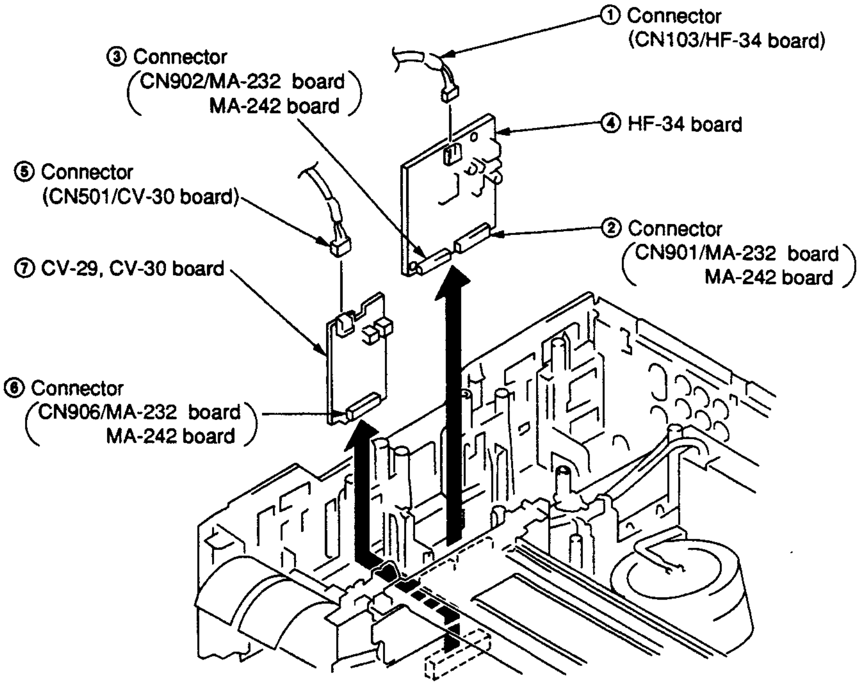
2-10. REMOVAL OF KR-31 BOARD



⑥ KR-31 board
① Three screws (BVTP3X12)
⑤ Connector (CN502/KR-31 board)
SLV-K862CH
-K862PS
-K872MN
-K872PS
④ Connector (CN503/KR-31 board)
③ Connector (CN506/KR-31 board)
② Connector (CN505/KR-31 board)

2-11. REMOVAL OF CV-29, CV-30 BOARD AND HF-34 BOARD

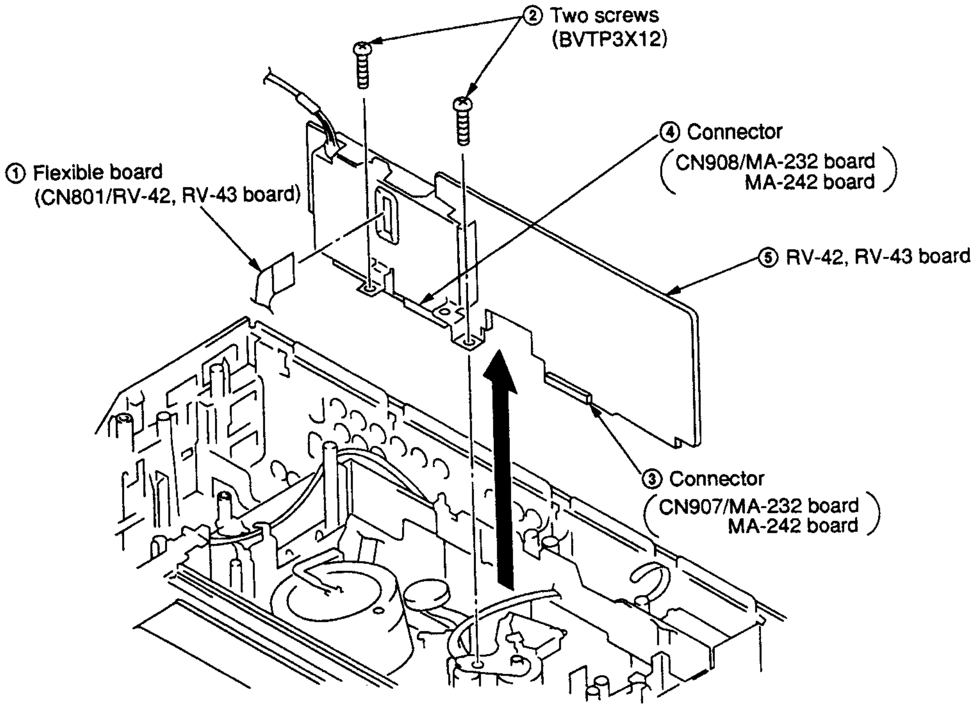
CV-29 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL
CV-30 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL



① Connector (CN103/HF-34 board)
③ Connector (CN902/MA-232 board MA-242 board)
④ HF-34 board
⑤ Connector (CN501/CV-30 board)
② Connector (CN901/MA-232 board MA-242 board)
⑦ CV-29, CV-30 board
⑥ Connector (CN906/MA-232 board MA-242 board)

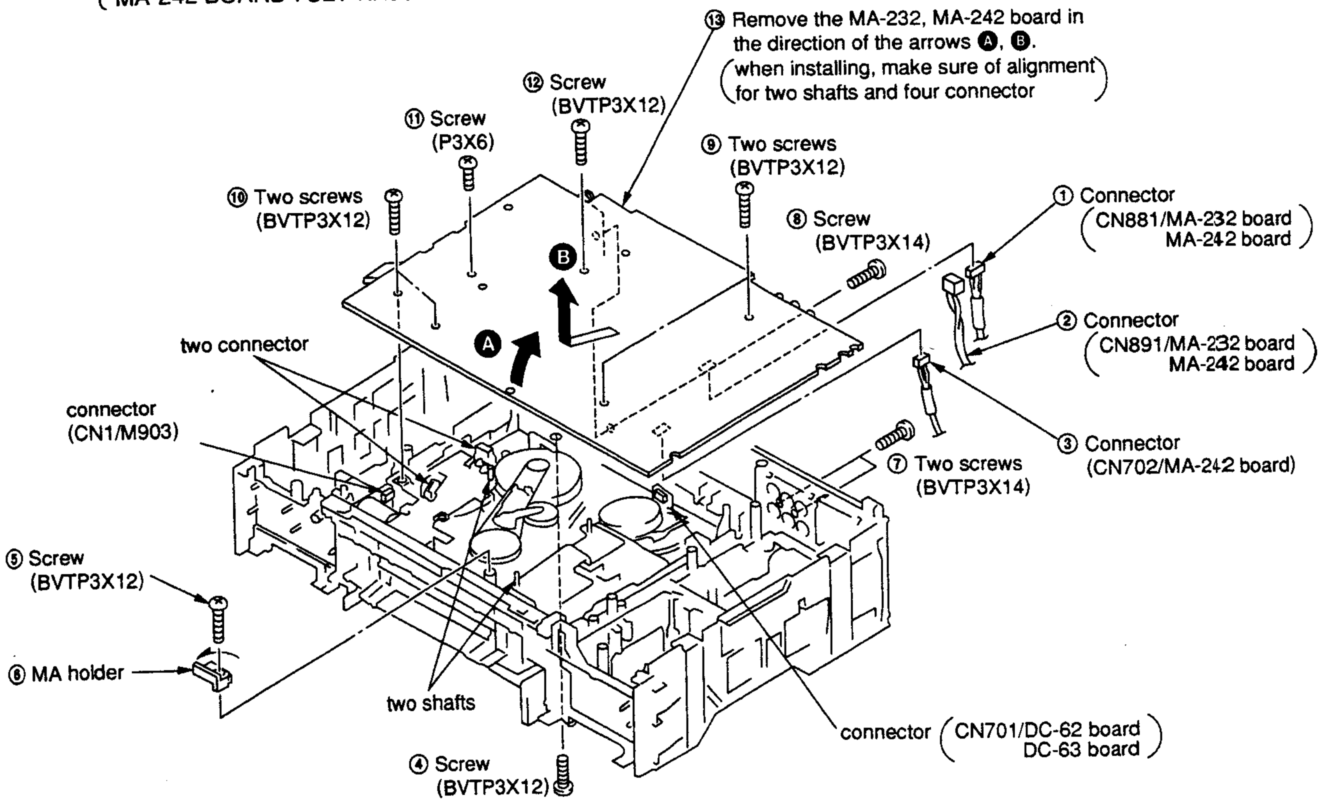
2-12. REMOVAL OF RV-42, RV-43 BOARD

RV-42 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL
RV-43 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL


② Two screws (BVTP3X12)
④ Connector (CN908/MA-232 board MA-242 board)
① Flexible board (CN801/RV-42, RV-43 board)
⑤ RV-42, RV-43 board
③ Connector (CN907/MA-232 board MA-242 board)

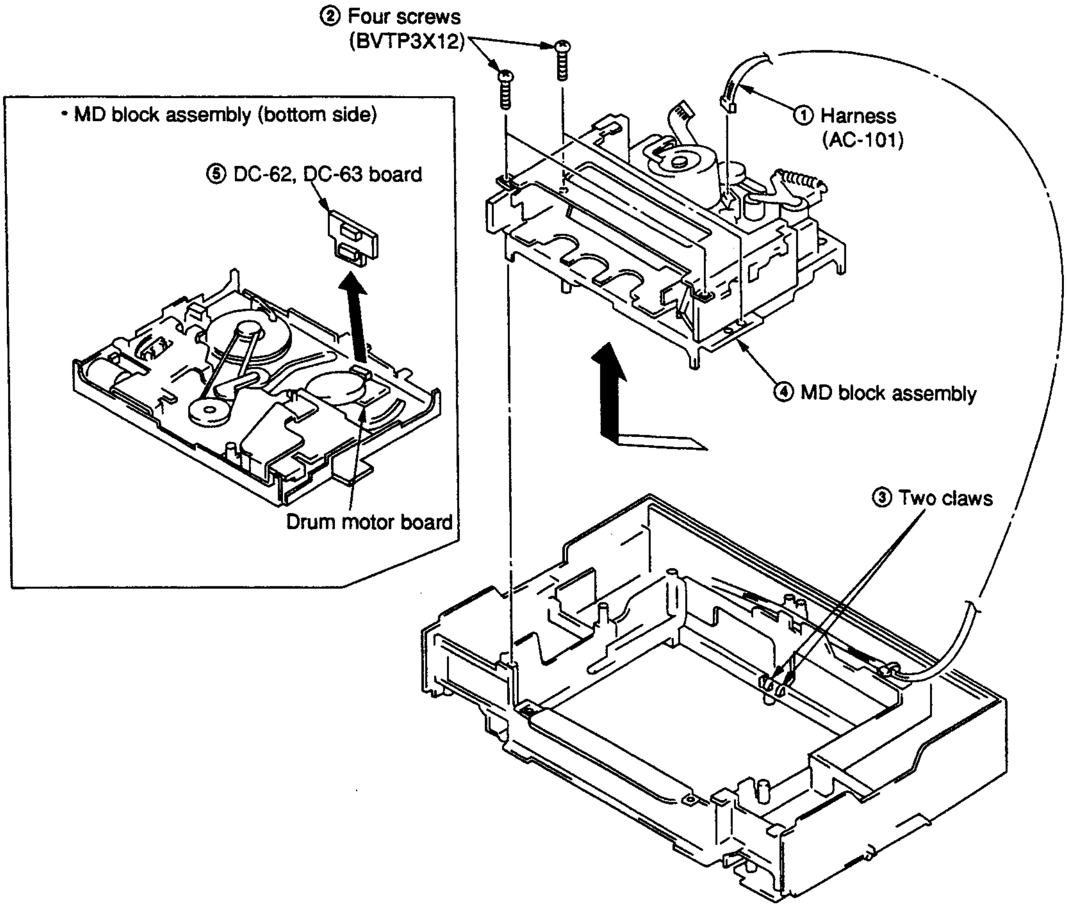
2-13. REMOVAL OF MA-232, MA-242 BOARD

MA-232 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL
MA-242 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL


⑬ Remove the MA-232, MA-242 board in the direction of the arrows Ⓐ, Ⓑ. (when installing, make sure of alignment for two shafts and four connector)
⑫ Screw (BVTP3X12)
⑪ Screw (P3X6)
⑨ Two screws (BVTP3X12)
⑩ Two screws (BVTP3X12)
⑧ Screw (BVTP3X14)
① Connector (CN881/MA-232 board MA-242 board)
B
A
two connector
② Connector (CN891/MA-232 board MA-242 board)
connector (CN1/M903)
③ Connector (CN702/MA-242 board)
⑦ Two screws (BVTP3X14)
⑤ Screw (BVTP3X12)
⑥ MA holder
two shafts
connector (CN701/DC-62 board DC-63 board)
④ Screw (BVTP3X12)

2-14. REMOVAL OF MD BLOCK ASSEMBLY, DC-62, DC-63 BOARD

DC-62 BOARD : SLV-K862CH/K862PS/K872MN/K872PS MODEL
DC-63 BOARD : SLV-KH3CH/KH3ME/KH3PS MODEL

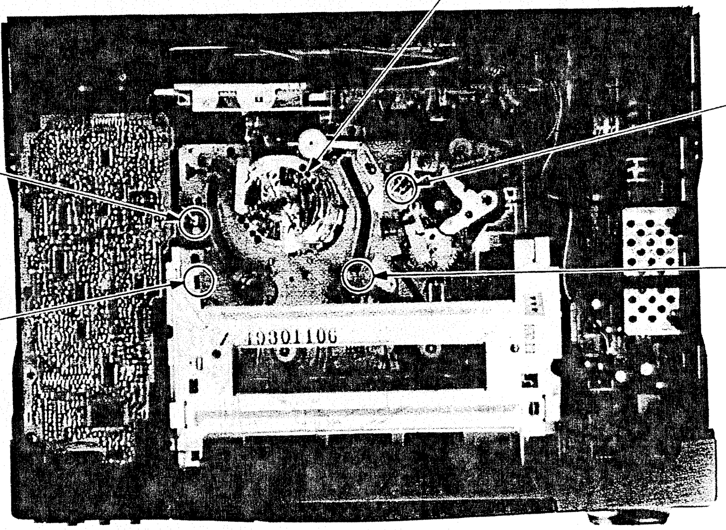

② Four screws
(BVTP3X12)
① Harness
(AC-101)
• MD block assembly (bottom side)
⑤ DC-62, DC-63 board
Drum motor board
④ MD block assembly
③ Two claws

2-15. MECHANICAL INTERNAL VIEWS

– Upper side –

M901

Drum assy	8-848-624-12 (DZH-68A-R)
Rotary upper drum assy	8-848-625-02 (DZR-68-R)



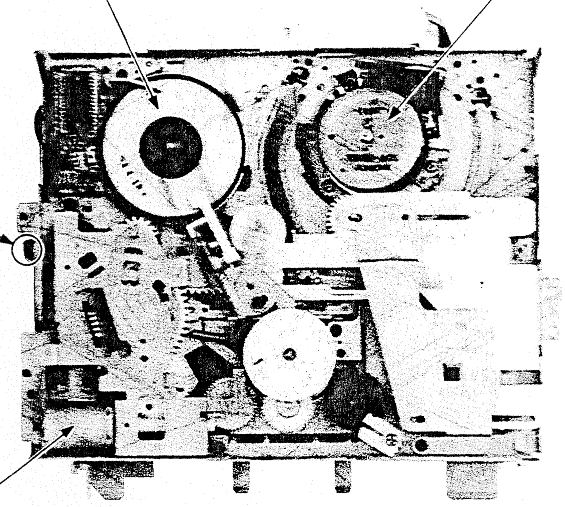
FE head
1-500-144-11

Q262
Tape end sensor
8-729-025-92

ACE head
A-6736-103-A

D261
Tape top/end LED
8-719-048-26

– Lower side –



M902
Capstan motor
1-698-409-11

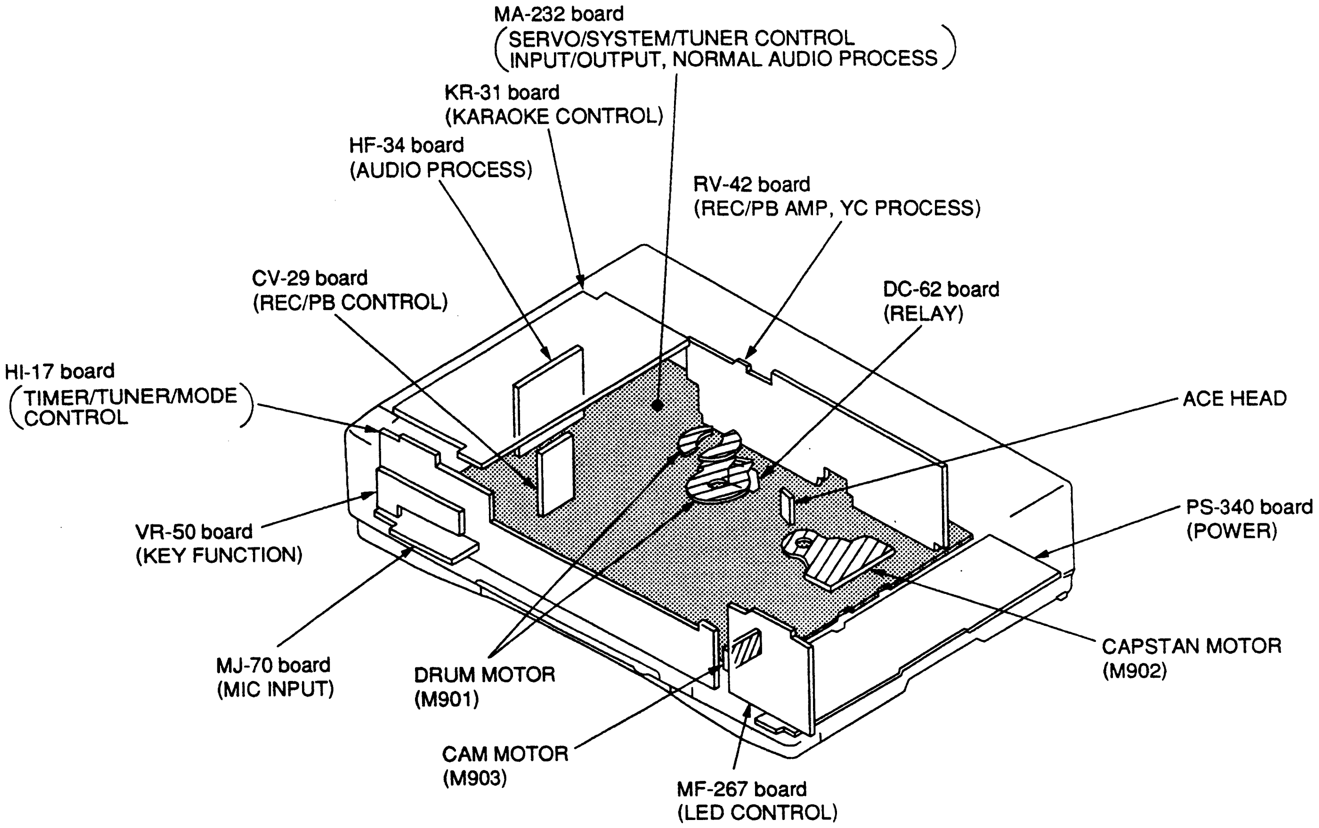
M901
Drum motor

Q261
Tape top sensor
8-729-025-92

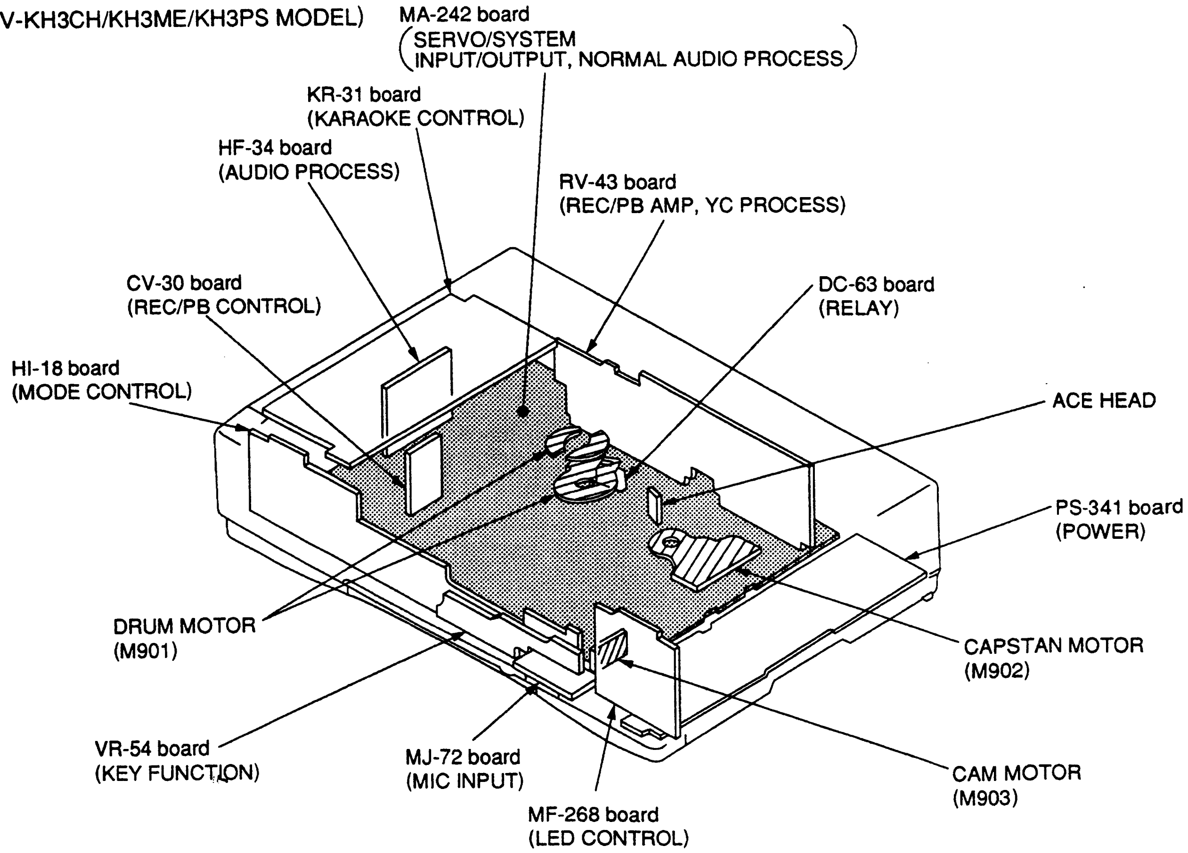
M903
Cam motor
X-3943-883-1

2-16. CIRCUIT BOARDS LOCATION

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
PS-340 board
(POWER)
VR-50 board
(KEY FUNCTION)
CAPSTAN MOTOR
(M902)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)

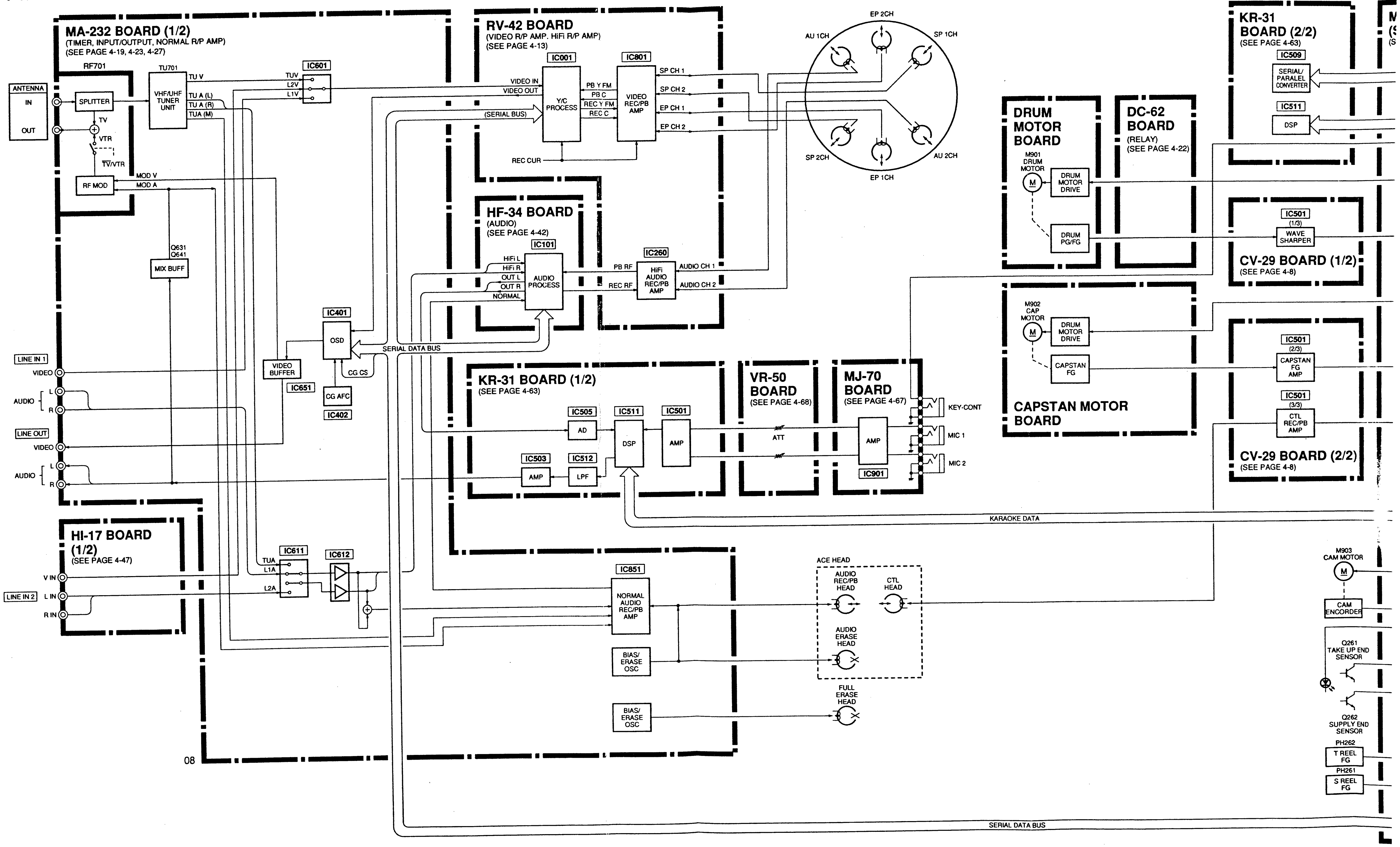

MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

SECTION 3
BLOCK DIAGRAMS

3-1. OVERALL BLOCK DIAGRAMS

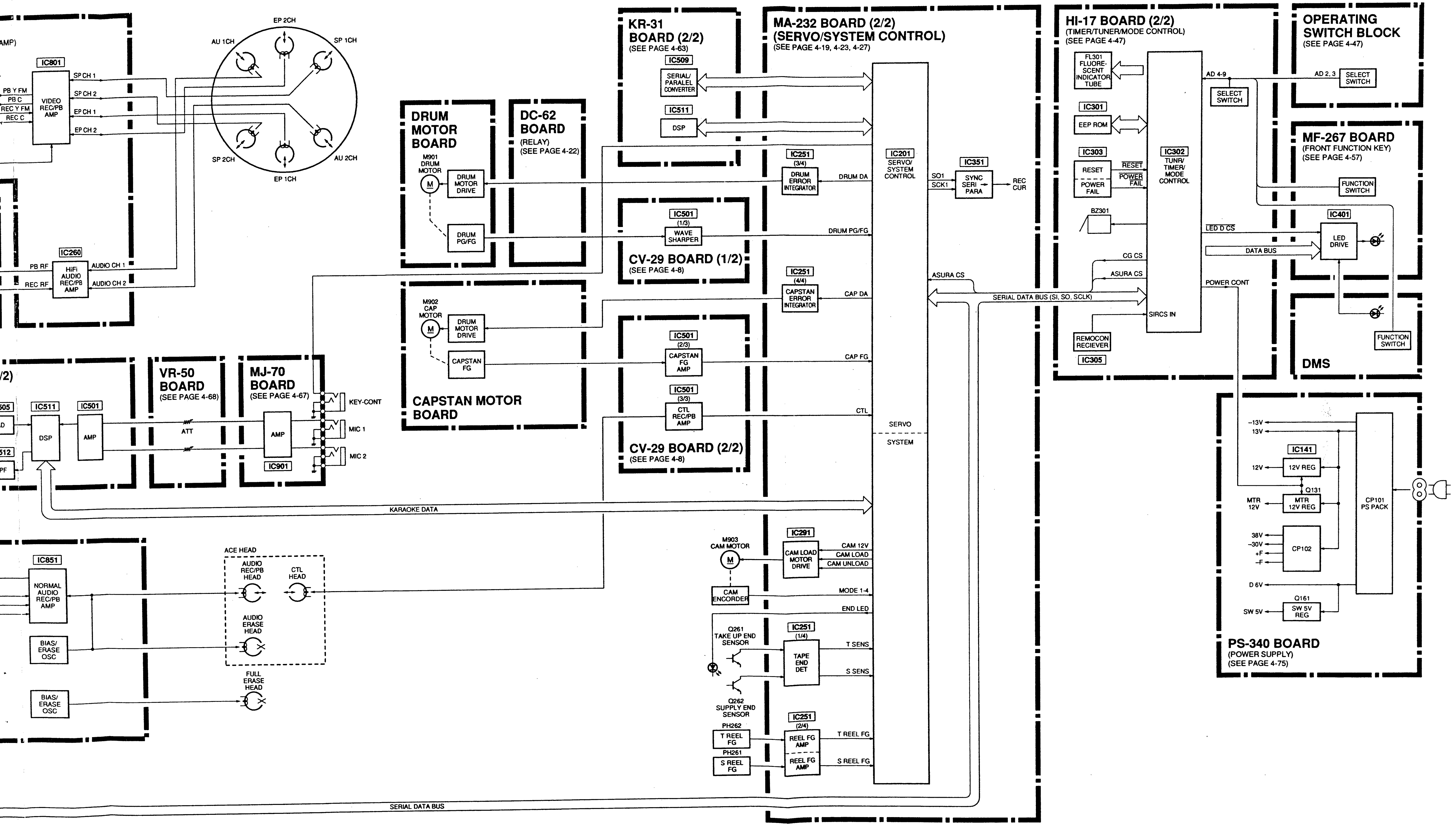
3-1-1. SLV-K862CH/K862PS/K872MN/K872PS MODEL

• The boards which signals only pass through may be omitted.



MA-232 BOARD (1/2)
(TIMER, INPUT/OUTPUT, NORMAL R/P AMP)
(SEE PAGE 4-19, 4-23, 4-27)
RF701
TU701
ANTENNA
IN
OUT
SPLITTER
TV
VTR
TV/VTR
RF MOD
MOD V
MOD A
VHF/UHF TUNER UNIT
TU V
TU A (L)
TU A (R)
TUA (M)
IC601
TUV
L2V
L1V
Q631
Q641
MIX BUFF
IC401
OSD
VIDEO BUFFER
IC651
CG CS
CG AFC
IC402
SERIAL DATA BUS
LINE IN 1
VIDEO
AUDIO
L
R
LINE OUT
VIDEO
AUDIO
L
R
HI-17 BOARD (1/2)
(SEE PAGE 4-47)
V IN
LINE IN 2
L IN
R IN
IC611
TUA
L1A
L2A
IC612
08
RV-42 BOARD
(VIDEO R/P AMP. HiFi R/P AMP)
(SEE PAGE 4-13)
IC001
IC801
VIDEO IN
VIDEO OUT
(SERIAL BUS)
Y/C PROCESS
PB Y FM
PB C
REC Y FM
REC C
VIDEO REC/PB AMP
SP CH 1
SP CH 2
EP CH 1
EP CH 2
REC CUR
HF-34 BOARD
(AUDIO)
(SEE PAGE 4-42)
IC101
HiFi L
HiFi R
OUT L
OUT R
NORMAL
AUDIO PROCESS
IC260
PB RF
REC RF
HiFi AUDIO REC/PB AMP
AUDIO CH 1
AUDIO CH 2
EP 2CH
AU 1CH
SP 1CH
SP 2CH
AU 2CH
EP 1CH
KR-31 BOARD (1/2)
(SEE PAGE 4-63)
IC505
IC511
IC501
AD
DSP
AMP
IC503
IC512
AMP
LPF
VR-50 BOARD
(SEE PAGE 4-68)
ATT
MJ-70 BOARD
(SEE PAGE 4-67)
AMP
IC901
KEY-CONT
MIC 1
MIC 2
KARAOKE DATA
IC851
NORMAL AUDIO REC/PB AMP
BIAS/ ERASE OSC
BIAS/ ERASE OSC
ACE HEAD
AUDIO REC/PB HEAD
CTL HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
DRUM MOTOR BOARD
M901 DRUM MOTOR
M
DRUM MOTOR DRIVE
DRUM PG/FG
DC-62 BOARD
(RELAY)
(SEE PAGE 4-22)
M902 CAP MOTOR
M
DRUM MOTOR DRIVE
CAPSTAN FG
CAPSTAN MOTOR BOARD
KR-31 BOARD (2/2)
(SEE PAGE 4-63)
IC509
SERIAL/ PARALEL CONVERTER
IC511
DSP
IC501
(1/3)
WAVE SHARPER
CV-29 BOARD (1/2)
(SEE PAGE 4-8)
IC501
(2/3)
CAPSTAN FG AMP
IC501
(3/3)
CTL REC/PB AMP
CV-29 BOARD (2/2)
(SEE PAGE 4-8)
M903 CAM MOTOR
M
CAM ENCORDER
Q261 TAKE UP END SENSOR
Q262 SUPPLY END SENSOR
PH262
T REEL FG
PH261
S REEL FG
SERIAL DATA BUS

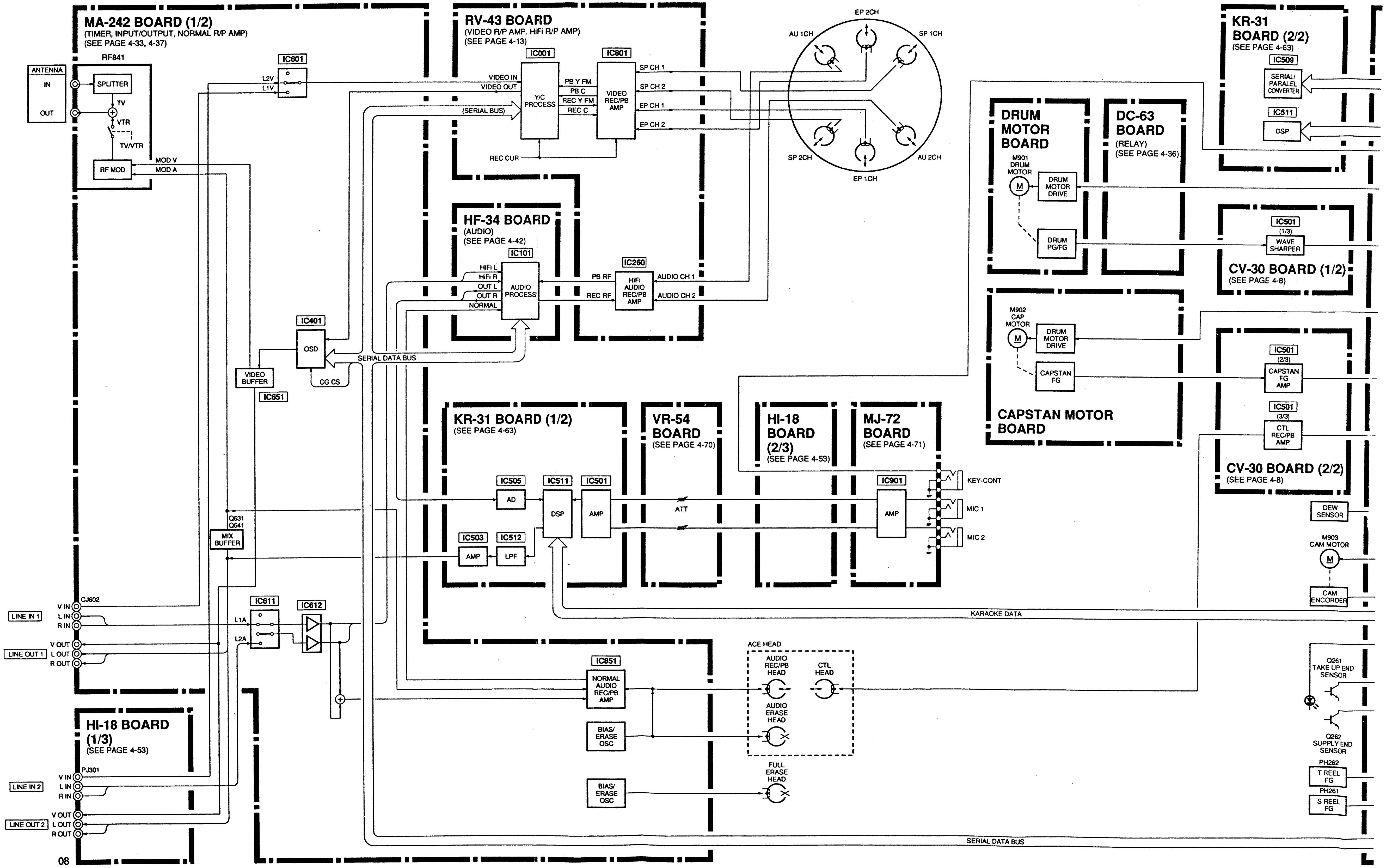
s through may be omitted.

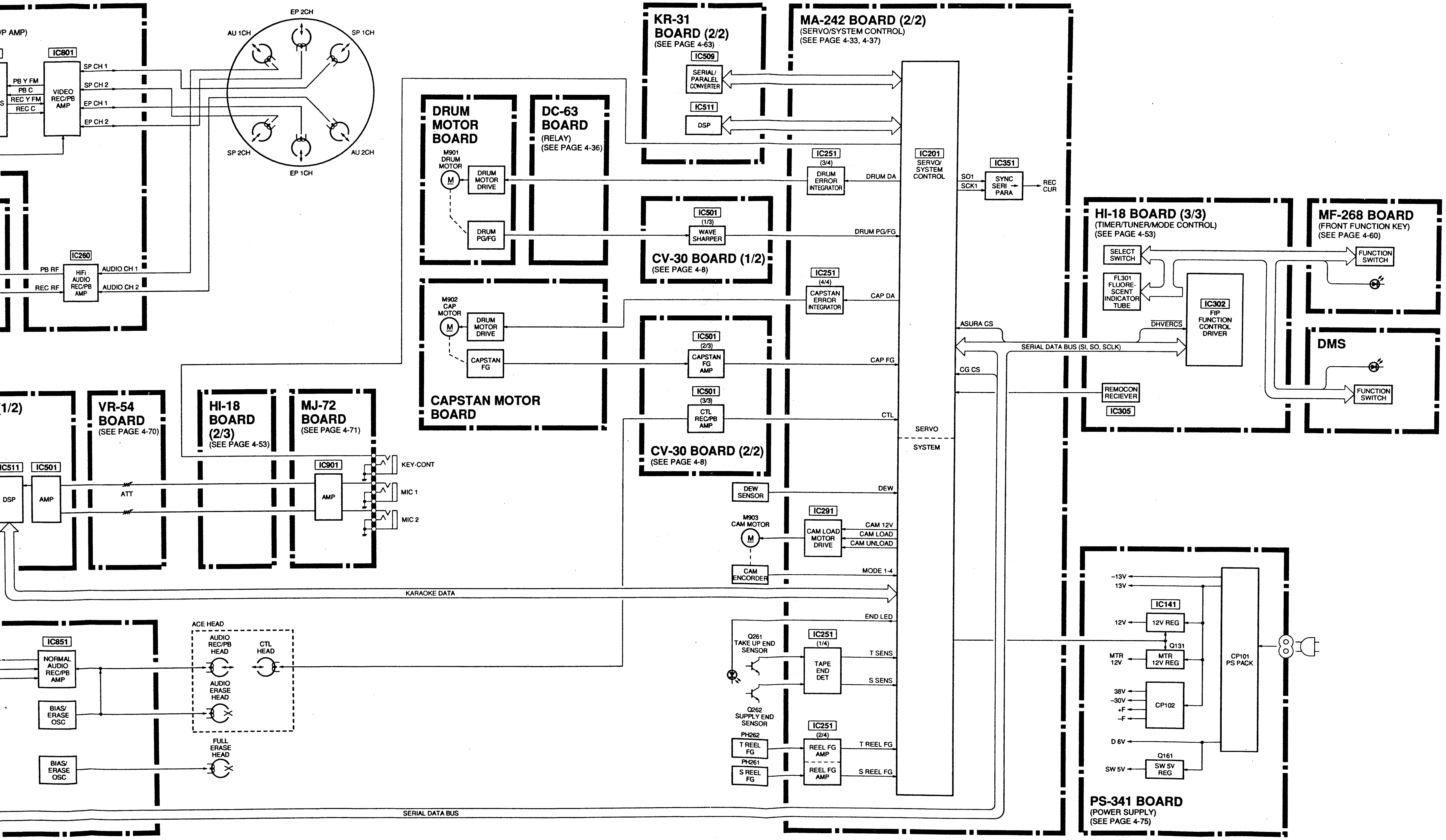


AMP)
IC801
VIDEO REC/PB AMP
PB Y FM
PB C
REC Y FM
REC C
SP CH 1
SP CH 2
EP CH 1
EP CH 2
EP 2CH
AU 1CH
SP 1CH
SP 2CH
AU 2CH
EP 1CH
IC260
HiFi AUDIO REC/PB AMP
PB RF
REC RF
AUDIO CH 1
AUDIO CH 2
DRUM MOTOR BOARD
M901 DRUM MOTOR
DRUM MOTOR DRIVE
DRUM PG/FG
DC-62 BOARD
(RELAY)
(SEE PAGE 4-22)
KR-31 BOARD (2/2)
(SEE PAGE 4-63)
IC509
SERIAL/ PARALEL CONVERTER
IC511
DSP
CV-29 BOARD (1/2)
(SEE PAGE 4-8)
IC501 (1/3)
WAVE SHARPER
M902 CAP MOTOR
DRUM MOTOR DRIVE
CAPSTAN FG
CAPSTAN MOTOR BOARD
IC501 (2/3)
CAPSTAN FG AMP
IC501 (3/3)
CTL REC/PB AMP
CV-29 BOARD (2/2)
(SEE PAGE 4-8)
MA-232 BOARD (2/2)
(SERVO/SYSTEM CONTROL)
(SEE PAGE 4-19, 4-23, 4-27)
IC251 (3/4)
DRUM ERROR INTEGRATOR
DRUM DA
DRUM PG/FG
IC251 (4/4)
CAPSTAN ERROR INTEGRATOR
CAP DA
CAP FG
CTL
IC201
SERVO/ SYSTEM CONTROL
SERVO
SYSTEM
SO1
SCK1
IC351
SYNC SERI PARA
REC CUR
ASURA CS
SERIAL DATA BUS (SI, SO, SCLK)
KARAOKE DATA
M903 CAM MOTOR
CAM ENCORDER
IC291
CAM LOAD MOTOR DRIVE
CAM 12V
CAM LOAD
CAM UNLOAD
MODE 1-4
END LED
Q261 TAKE UP END SENSOR
Q262 SUPPLY END SENSOR
IC251 (1/4)
TAPE END DET
T SENS
S SENS
PH262
T REEL FG
PH261
S REEL FG
IC251 (2/4)
REEL FG AMP
REEL FG AMP
T REEL FG
S REEL FG
SERIAL DATA BUS
HI-17 BOARD (2/2)
(TIMER/TUNER/MODE CONTROL)
(SEE PAGE 4-47)
FL301 FLUORE- SCENT INDICATOR TUBE
IC301
EEP ROM
IC303
RESET
POWER FAIL
BZ301
IC302
TUNR/ TIMER/ MODE CONTROL
CG CS
ASURA CS
SIRCS IN
REMOCON RECIEVER
IC305
AD 4-9
SELECT SWITCH
LED D CS
DATA BUS
POWER CONT
OPERATING SWITCH BLOCK
(SEE PAGE 4-47)
AD 2, 3
SELECT SWITCH
MF-267 BOARD
(FRONT FUNCTION KEY)
(SEE PAGE 4-57)
FUNCTION SWITCH
IC401
LED DRIVE
FUNCTION SWITCH
DMS
/2)
505
IC511
IC501
DSP
AMP
512
PF
VR-50 BOARD
(SEE PAGE 4-68)
ATT
MJ-70 BOARD
(SEE PAGE 4-67)
AMP
IC901
KEY-CONT
MIC 1
MIC 2
IC851
NORMAL AUDIO REC/PB AMP
BIAS/ ERASE OSC
BIAS/ ERASE OSC
ACE HEAD
AUDIO REC/PB HEAD
CTL HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
−13V
13V
IC141
12V
12V REG
Q131
MTR 12V
MTR 12V REG
CP101 PS PACK
38V
−30V
+F
−F
CP102
D 6V
Q161
SW 5V
SW 5V REG
PS-340 BOARD
(POWER SUPPLY)
(SEE PAGE 4-75)

3-1-2. SLV-KH3CH/KH3ME/KH3PS MODEL

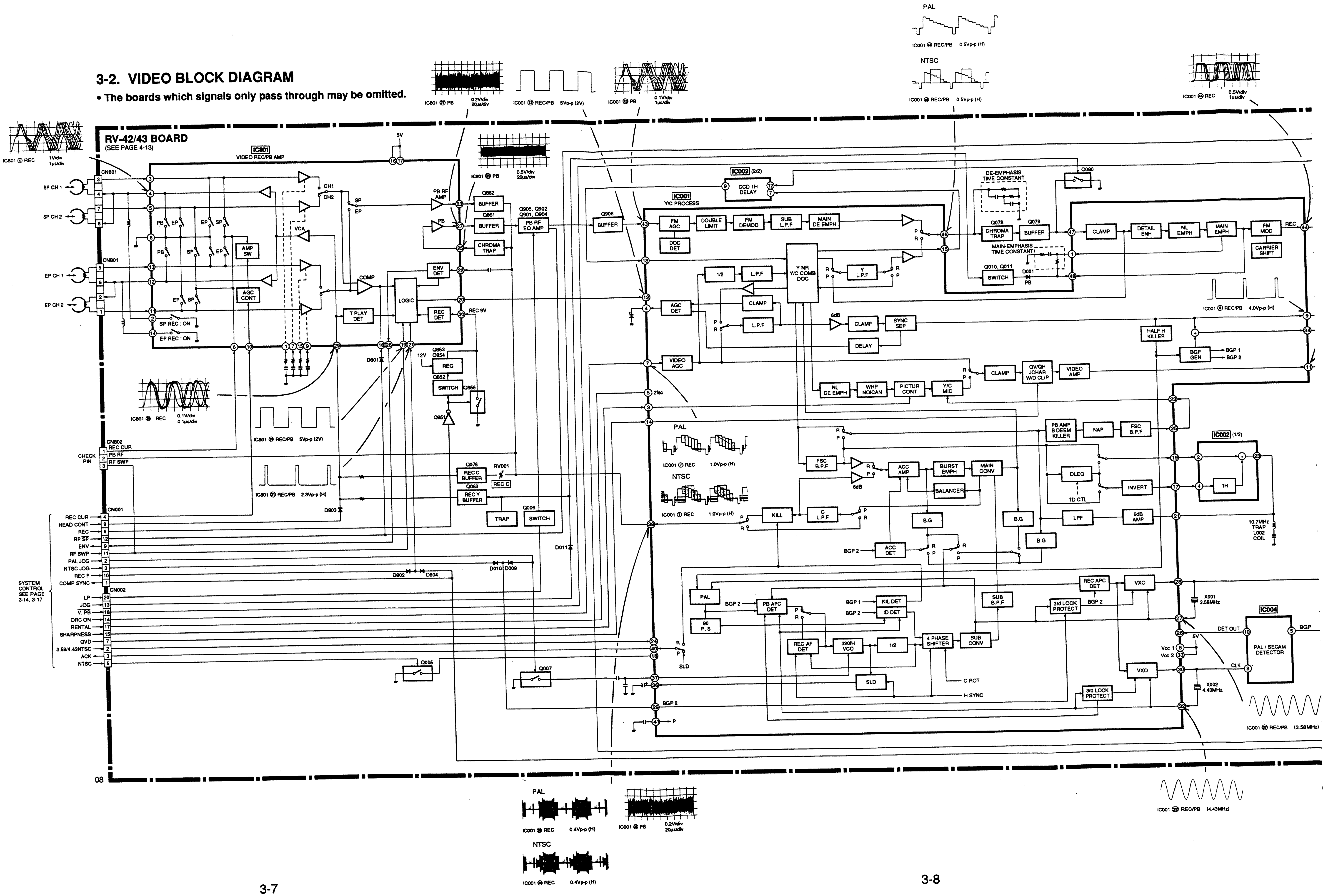
- The boards which signals only pass through may be omitted.

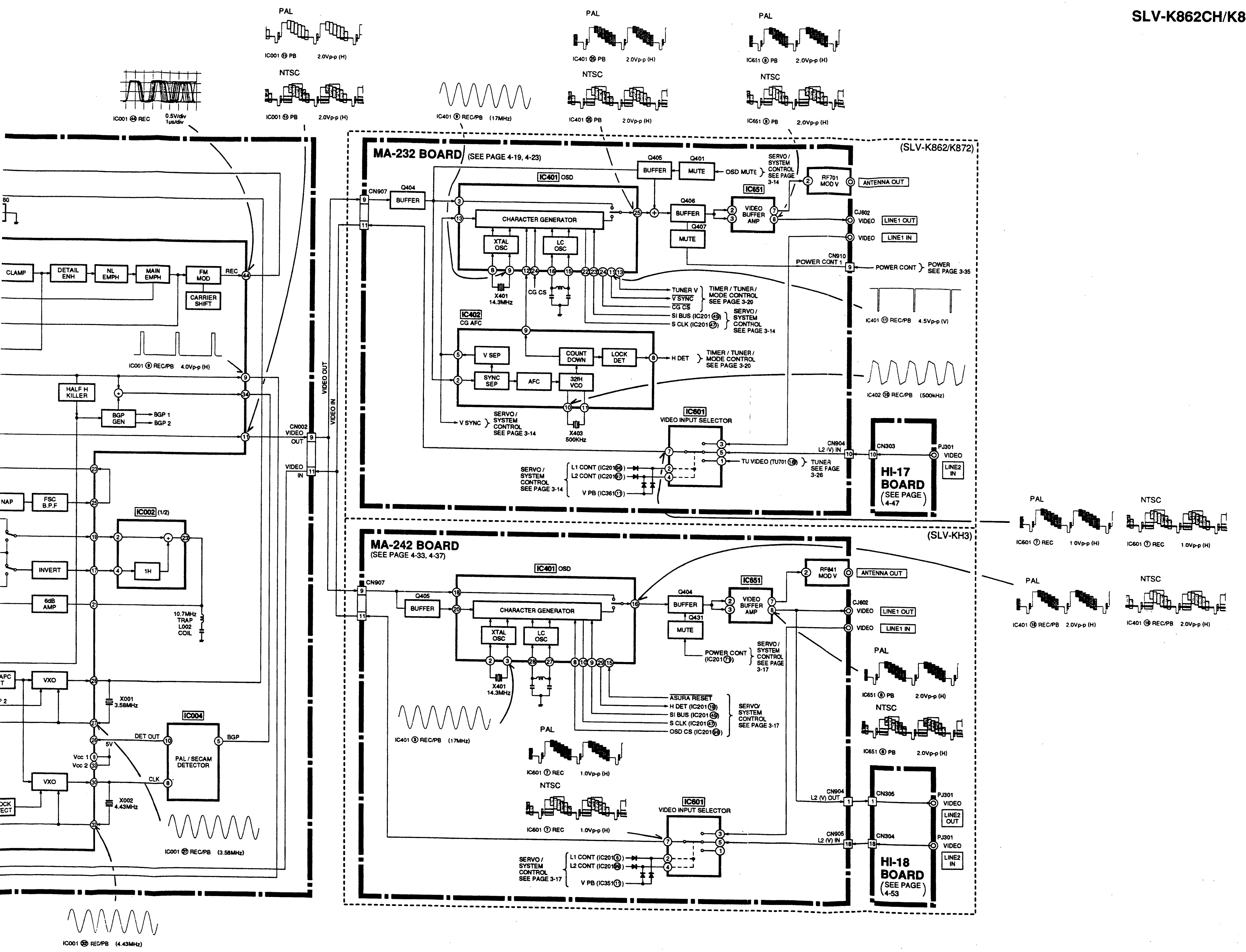

MA-242 BOARD (1/2)
(TIMER, INPUT/OUTPUT, NORMAL R/P AMP)
(SEE PAGE 4-33, 4-37)
RF841
ANTENNA
IN
OUT
SPLITTER
TV
VTR
TV/VTR
RF MOD
MOD V
MOD A
IC601
L2V
L1V
IC401
OSD
CG CS
SERIAL DATA BUS
VIDEO BUFFER
IC651
Q631
Q641
MIX BUFFER
CJ602
LINE IN 1
V IN
L IN
R IN
LINE OUT 1
V OUT
L OUT
R OUT
IC611
L1A
L2A
IC612
HI-18 BOARD (1/3)
(SEE PAGE 4-53)
PJ301
LINE IN 2
LINE OUT 2
08
RV-43 BOARD
(VIDEO R/P AMP. HiFi R/P AMP)
(SEE PAGE 4-13)
IC001
IC801
VIDEO IN
VIDEO OUT
(SERIAL BUS)
Y/C PROCESS
PB Y FM
PB C
REC Y FM
REC C
VIDEO REC/PB AMP
SP CH 1
SP CH 2
EP CH 1
EP CH 2
REC CUR
HF-34 BOARD
(AUDIO)
(SEE PAGE 4-42)
IC101
HiFi L
HiFi R
OUT L
OUT R
NORMAL
AUDIO PROCESS
IC260
PB RF
REC RF
HiFi AUDIO REC/PB AMP
AUDIO CH 1
AUDIO CH 2
EP 2CH
AU 1CH
SP 1CH
SP 2CH
AU 2CH
EP 1CH
KR-31 BOARD (1/2)
(SEE PAGE 4-63)
IC505
AD
IC511
DSP
IC501
AMP
IC503
AMP
IC512
LPF
VR-54 BOARD
(SEE PAGE 4-70)
ATT
HI-18 BOARD (2/3)
(SEE PAGE 4-53)
MJ-72 BOARD
(SEE PAGE 4-71)
IC901
AMP
KEY-CONT
MIC 1
MIC 2
KARAOKE DATA
IC851
NORMAL AUDIO REC/PB AMP
BIAS/ ERASE OSC
BIAS/ ERASE OSC
ACE HEAD
AUDIO REC/PB HEAD
CTL HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
SERIAL DATA BUS
DRUM MOTOR BOARD
M901 DRUM MOTOR
M
DRUM MOTOR DRIVE
DRUM PG/FG
DC-63 BOARD
(RELAY)
(SEE PAGE 4-36)
M902 CAP MOTOR
M
DRUM MOTOR DRIVE
CAPSTAN FG
CAPSTAN MOTOR BOARD
KR-31 BOARD (2/2)
(SEE PAGE 4-63)
IC509
SERIAL/ PARALEL CONVERTER
IC511
DSP
IC501
(1/3)
WAVE SHARPER
CV-30 BOARD (1/2)
(SEE PAGE 4-8)
IC501
(2/3)
CAPSTAN FG AMP
IC501
(3/3)
CTL REC/PB AMP
CV-30 BOARD (2/2)
(SEE PAGE 4-8)
DEW SENSOR
M903 CAM MOTOR
M
CAM ENCORDER
Q261 TAKE UP END SENSOR
Q262 SUPPLY END SENSOR
PH262
T REEL FG
PH261
S REEL FG


/P AMP)
IC801
VIDEO REC/PB AMP
PB Y FM
PB C
REC Y FM
REC C
SP CH 1
SP CH 2
EP CH 1
EP CH 2
EP 2CH
AU 1CH
SP 1CH
SP 2CH
AU 2CH
EP 1CH
IC260
HiFi AUDIO REC/PB AMP
PB RF
REC RF
AUDIO CH 1
AUDIO CH 2
DRUM MOTOR BOARD
M901 DRUM MOTOR
DRUM MOTOR DRIVE
DRUM PG/FG
DC-63 BOARD
(RELAY)
(SEE PAGE 4-36)
M902 CAP MOTOR
DRUM MOTOR DRIVE
CAPSTAN FG
CAPSTAN MOTOR BOARD
KR-31 BOARD (2/2)
(SEE PAGE 4-63)
IC509
SERIAL/ PARALEL CONVERTER
IC511
DSP
CV-30 BOARD (1/2)
(SEE PAGE 4-8)
IC501 (1/3)
WAVE SHARPER
CV-30 BOARD (2/2)
(SEE PAGE 4-8)
IC501 (2/3)
CAPSTAN FG AMP
IC501 (3/3)
CTL REC/PB AMP
MA-242 BOARD (2/2)
(SERVO/SYSTEM CONTROL)
(SEE PAGE 4-33, 4-37)
IC251 (3/4)
DRUM ERROR INTEGRATOR
DRUM DA
DRUM PG/FG
IC251 (4/4)
CAPSTAN ERROR INTEGRATOR
CAP DA
CAP FG
CTL
IC201
SERVO/ SYSTEM CONTROL
SERVO
SYSTEM
SO1
SCK1
IC351
SYNC SERI PARA
REC CUR
ASURA CS
CG CS
SERIAL DATA BUS (SI, SO, SCLK)
DEW SENSOR
DEW
M903 CAM MOTOR
IC291
CAM LOAD MOTOR DRIVE
CAM 12V
CAM LOAD
CAM UNLOAD
CAM ENCORDER
MODE 1-4
KARAOKE DATA
END LED
Q261 TAKE UP END SENSOR
Q262 SUPPLY END SENSOR
IC251 (1/4)
TAPE END DET
T SENS
S SENS
PH262
T REEL FG
PH261
S REEL FG
IC251 (2/4)
REEL FG AMP
REEL FG AMP
T REEL FG
S REEL FG
SERIAL DATA BUS
1/2)
IC511
DSP
IC501
AMP
ATT
VR-54 BOARD
(SEE PAGE 4-70)
HI-18 BOARD (2/3)
(SEE PAGE 4-53)
MJ-72 BOARD
(SEE PAGE 4-71)
IC901
AMP
KEY-CONT
MIC 1
MIC 2
IC851
NORMAL AUDIO REC/PB AMP
BIAS/ ERASE OSC
BIAS/ ERASE OSC
ACE HEAD
AUDIO REC/PB HEAD
CTL HEAD
AUDIO ERASE HEAD
FULL ERASE HEAD
HI-18 BOARD (3/3)
(TIMER/TUNER/MODE CONTROL)
(SEE PAGE 4-53)
SELECT SWITCH
FL301 FLUORE-SCENT INDICATOR TUBE
IC302
FIP FUNCTION CONTROL DRIVER
DHVERCS
REMOCON RECIEVER
IC305
MF-268 BOARD
(FRONT FUNCTION KEY)
(SEE PAGE 4-60)
FUNCTION SWITCH
DMS
FUNCTION SWITCH
PS-341 BOARD
(POWER SUPPLY)
(SEE PAGE 4-75)
–13V
13V
IC141
12V REG
12V
Q131
MTR 12V
MTR 12V REG
38V
–30V
+F
–F
CP102
CP101 PS PACK
D 6V
Q161
SW 5V
SW 5V REG

3-2. VIDEO BLOCK DIAGRAM

- **The boards which signals only pass through may be omitted.**

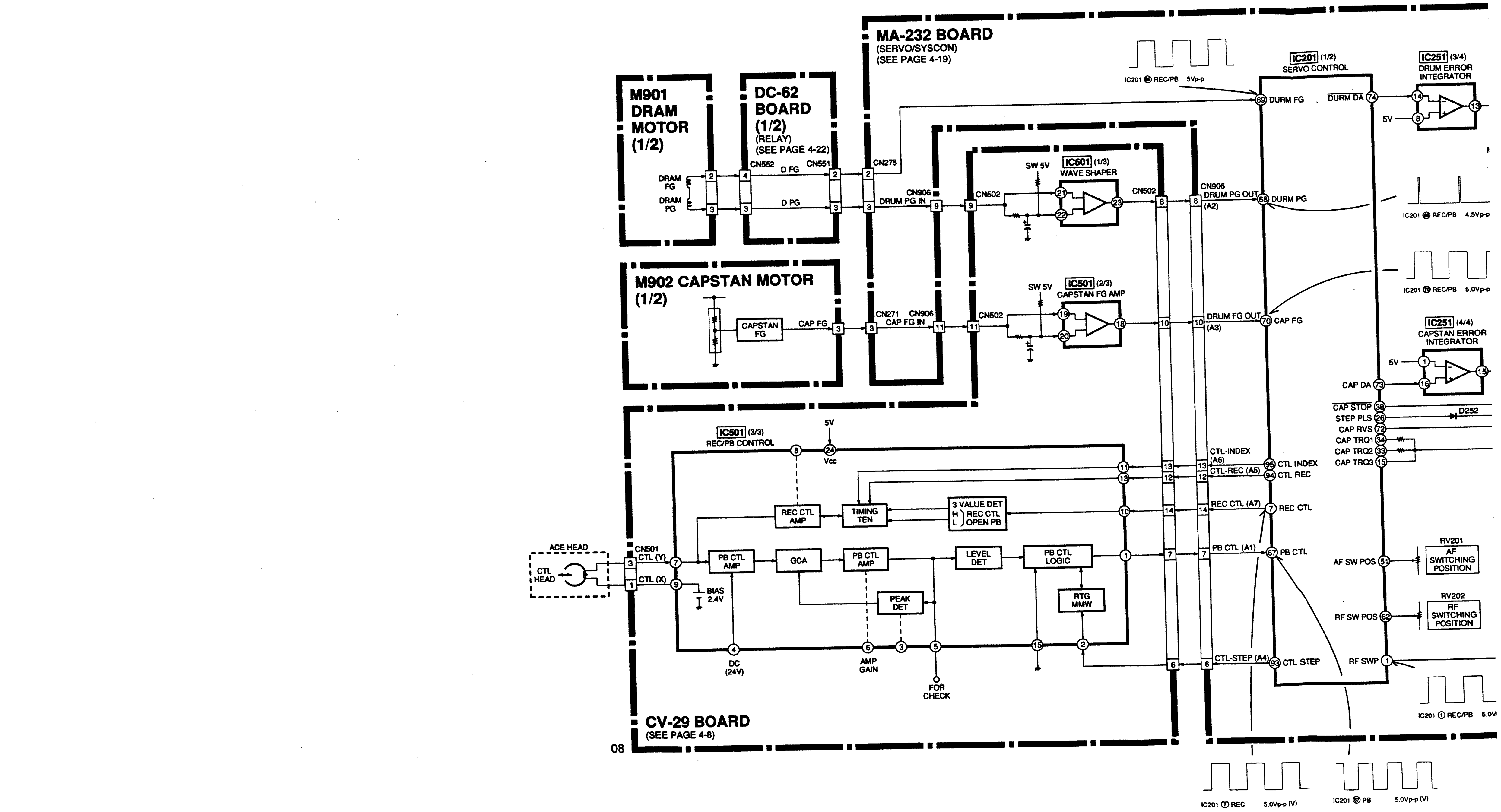

RV-42/43 BOARD
(SEE PAGE 4-13)
IC801
VIDEO REC/PB AMP
5V
CN801
SP CH 1
SP CH 2
EP CH 1
EP CH 2
CH1
CH2
SP
EP
PB
AMP SW
AGC CONT
VCA
COMP
LOGIC
T PLAY DET
ENV DET
REC DET
REC 9V
PB RF AMP
BUFFER
CHROMA TRAP
Q862
Q861
Q905, Q902
Q901, Q904
PB RF EQ AMP
SP REC : ON
EP REC : ON
12V
REG
SWITCH
Q853
Q854
Q852
Q855
Q851
D801
D802
D803
D804
D009
D010
D011
CN802
REC CUR
PB RF
RF SWP
CHECK PIN
Q076
REC C BUFFER
RV001
REC C
Q063
REC Y BUFFER
TRAP
Q006
SWITCH
Q005
Q007
CN001
REC CUR
HEAD CONT
REC
RP SP
ENV
RF SWP
PAL JOG
NTSC JOG
REC P
COMP SYNC
CN002
LP
JOG
V. PB
ORC ON
RENTAL
SHARPNESS
QVD
3.58/4.43NTSC
ACK
NTSC
SYSTEM CONTROL SEE PAGE 3-14, 3-17
IC801 ④ REC 1V/div 1μs/div
IC801 ㉗ PB 0.2V/div 20μs/div
IC001 ⑬ REC/PB 5Vp-p (2V)
IC001 ⑫ PB 0.1V/div 1μs/div
IC801 ㉓ PB 0.5V/div 20μs/div
IC801 ㉙ REC 0.1V/div 0.1μs/div
IC801 ㉖ REC/PB 5Vp-p (2V)
IC801 ㉑ REC/PB 2.3Vp-p (H)
Q906
BUFFER
IC002 (2/2)
CCD 1H DELAY
IC001
Y/C PROCESS
FM AGC
DOUBLE LIMIT
FM DEMOD
SUB L.P.F
MAIN DE EMPH
DOC DET
Y NR Y/C COMB DOC
1/2
L.P.F
Y L.P.F
AGC DET
CLAMP
6dB
SYNC SEP
DELAY
VIDEO AGC
NL DE EMPH
WHP NOICAN
PICTUR CONT
Y/C MIC
CLAMP
OV/QH JCHAR W/D CLIP
VIDEO AMP
2fsc
PAL
NTSC
IC001 ⑦ REC 1.0Vp-p (H)
IC001 ⑦ REC 1.0Vp-p (H)
FSC B.P.F
ACC AMP
BURST EMPH
MAIN CONV
BALANCER
KILL
C L.P.F
B.G
ACC DET
BGP 2
PB APC DET
BGP 1
KIL DET
ID DET
SUB B.P.F
SUB CONV
4 PHASE SHIFTER
90 P. S
REC AF DET
320fH VCO
1/2
SLD
C ROT
H SYNC
BGP 2
P
DE-EMPHASIS TIME CONSTANT
Q080
Q078
Q079
CHROMA TRAP
BUFFER
MAIN-EMPHASIS TIME CONSTANT
Q010, Q011
SWITCH
D001
PB
CLAMP
DETAIL ENH
NL EMPH
MAIN EMPH
FM MOD
REC
CARRIER SHIFT
IC001 ⑨ REC/PB 4.0Vp-p (H)
HALF H KILLER
BGP GEN
BGP 1
BGP 2
PB AMP B DEEM KILLER
NAP
FSC B.P.F
IC002 (1/2)
1H
DLEQ
TD CTL
INVERT
LPF
6dB AMP
10.7MHz TRAP L002 COIL
REC APC DET
VXO
3rd LOCK PROTECT
X001 3.58MHz
X002 4.43MHz
IC004
PAL / SECAM DETECTOR
DET OUT
BGP
CLK
Vcc 1
Vcc 2
5V
PAL
IC001 ㊹ REC/PB 0.5Vp-p (H)
NTSC
IC001 ㊹ REC/PB 0.5Vp-p (H)
IC001 ㊹ REC 0.5V/div 1μs/div
IC001 ㉗ REC/PB (3.58MHz)
IC001 ㉜ REC/PB (4.43MHz)
IC001 ㊱ REC 0.4Vp-p (H)
IC001 ㊱ PB 0.2V/div 20μs/div
IC001 ㊱ REC 0.4Vp-p (H)
08

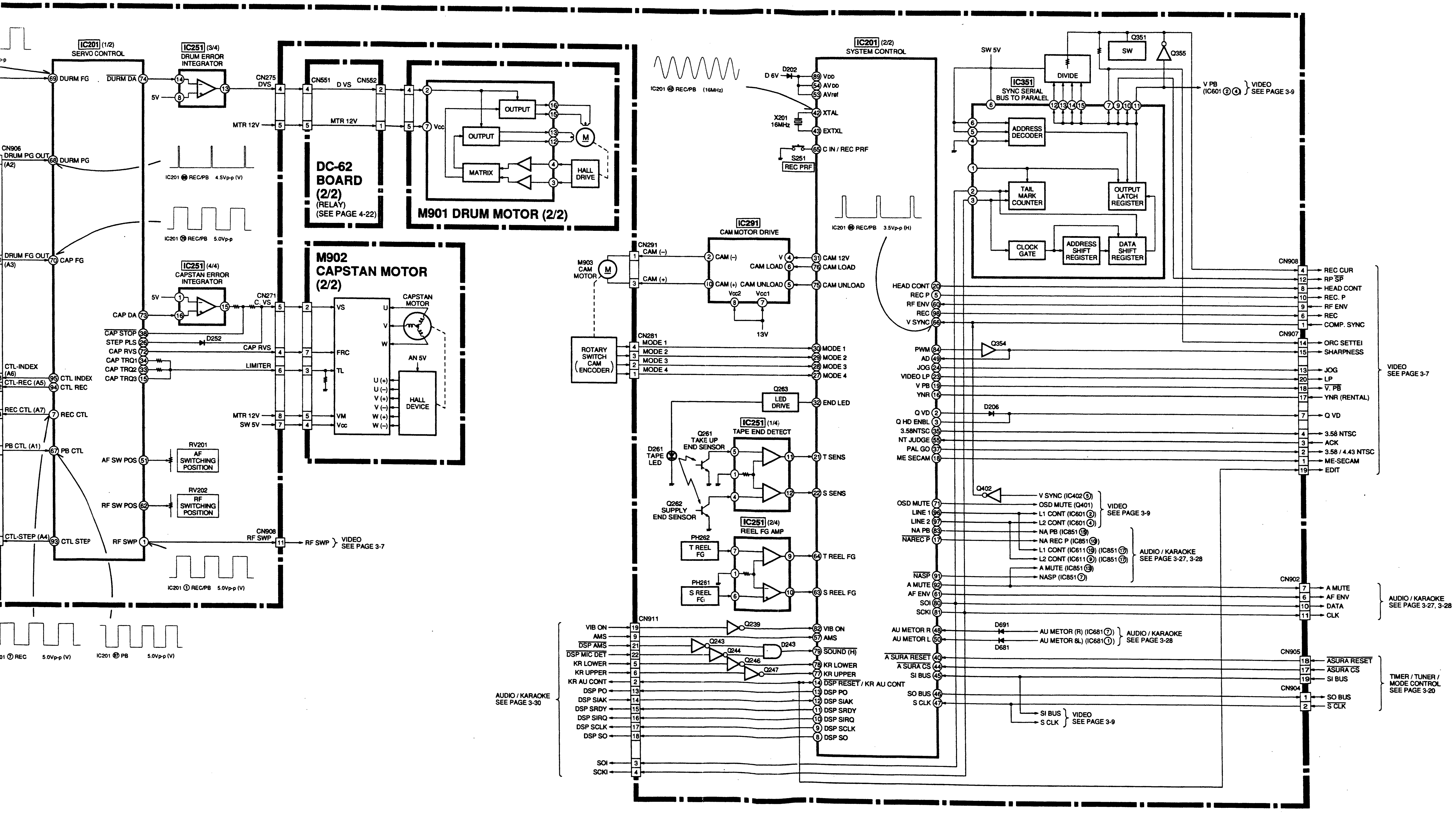

PAL
IC001 ⑮ PB 2.0Vp-p (H)
NTSC
IC001 ⑮ PB 2.0Vp-p (H)
IC001 ㊹ REC 0.5V/div 1us/div
IC401 ⑨ REC/PB (17MHz)
IC401 ㉕ PB 2.0Vp-p (H)
IC651 ⑧ PB 2.0Vp-p (H)
MA-232 BOARD (SEE PAGE 4-19, 4-23)
(SLV-K862/K872)
CN907
Q404 BUFFER
IC401 OSD
CHARACTER GENERATOR
XTAL OSC
LC OSC
X401 14.3MHz
CG CS
Q405 BUFFER
Q401 MUTE
OSD MUTE
SERVO / SYSTEM CONTROL SEE PAGE 3-14
RF701 MOD V
ANTENNA OUT
IC651 VIDEO BUFFER AMP
Q406 BUFFER
Q407 MUTE
CJ602 VIDEO LINE1 OUT
VIDEO LINE1 IN
CN910 POWER CONT
POWER CONT
POWER SEE PAGE 3-35
TUNER V
V SYNC
CG CS
SI BUS (IC201 ㊽)
S CLK (IC201 ㊼)
TIMER / TUNER / MODE CONTROL SEE PAGE 3-20
SERVO / SYSTEM CONTROL SEE PAGE 3-14
IC401 ⑪ REC/PB 4.5Vp-p (V)
IC402 CG AFC
V SEP
COUNT DOWN
LOCK DET
SYNC SEP
AFC
32fH VCO
H DET
X403 500KHz
V SYNC
IC402 ⑩ REC/PB (500kHz)
IC601 VIDEO INPUT SELECTOR
CN904 L2 (V) IN
TU VIDEO (TU701 ⑯)
TUNER SEE PAGE 3-26
L1 CONT (IC201 ㊾)
L2 CONT (IC201 ㊼)
V PB (IC351 ⑪)
CN303
PJ301 VIDEO
LINE2 IN
HI-17 BOARD (SEE PAGE 4-47)
VIDEO OUT
VIDEO IN
CN002 VIDEO OUT
VIDEO IN
CLAMP
DETAIL ENH
NL EMPH
MAIN EMPH
FM MOD
REC
CARRIER SHIFT
IC001 ⑥ REC/PB 4.0Vp-p (H)
HALF H KILLER
BGP GEN
BGP 1
BGP 2
FSC B.P.F
IC002 (1/2)
1H
INVERT
6dB AMP
10.7MHz TRAP L002 COIL
VXO
X001 3.58MHz
IC004
DET OUT
BGP
PAL / SECAM DETECTOR
CLK
5V
Vcc 1
Vcc 2
X002 4.43MHz
IC001 ㉗ REC/PB (3.58MHz)
IC001 ㉜ REC/PB (4.43MHz)
MA-242 BOARD (SEE PAGE 4-33, 4-37)
(SLV-KH3)
Q405 BUFFER
Q404 BUFFER
Q431 MUTE
RF641 MOD V
POWER CONT (IC201 ⑦)
SERVO / SYSTEM CONTROL SEE PAGE 3-17
ASURA RESET
H DET (IC201 ⑲)
SI BUS (IC201 ㊽)
S CLK (IC201 ㊼)
OSD CS (IC201 ㊿)
IC401 ⑨ REC/PB (17MHz)
IC601 ⑦ REC 1.0Vp-p (H)
IC651 ⑥ PB 2.0Vp-p (H)
CN904 L2 (V) OUT
CN905 L2 (V) IN
CN305
CN304
PJ301 VIDEO LINE2 OUT
PJ301 VIDEO LINE2 IN
HI-18 BOARD (SEE PAGE 4-53)
V PB (IC351 ⑪)
IC401 ⑯ REC/PB 2.0Vp-p (H)

3-3. SERVO/SYSTEM CONTROL BLOCK DIAGRAMS

3-3-1. SLV-K862CH/K862PS/K872MN/K872PS MODEL

- The boards which signals only pass through may be omitted.

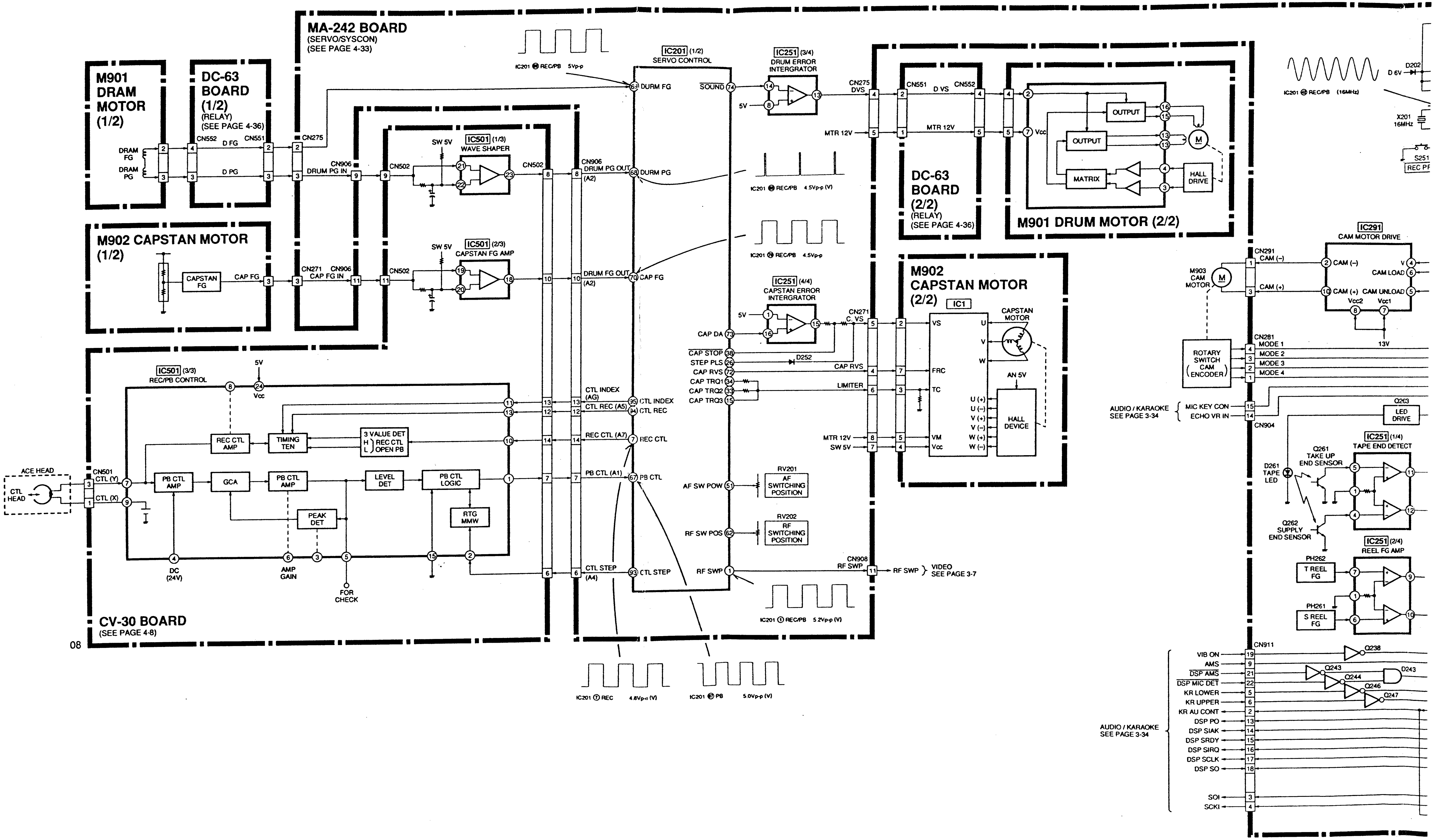

MA-232 BOARD
(SERVO/SYSCON)
(SEE PAGE 4-19)
IC201 (69) REC/PB 5Vp-p
M901
DRAM
MOTOR
(1/2)
DRAM FG
DRAM PG
DC-62
BOARD
(1/2)
(RELAY)
(SEE PAGE 4-22)
CN552
D FG
CN551
D PG
CN275
CN906
DRUM PG IN
CN502
SW 5V
IC501 (1/3)
WAVE SHAPER
CN502
CN906
DRUM PG OUT
(A2)
M902 CAPSTAN MOTOR
(1/2)
CAPSTAN FG
CAP FG
CN271
CN906
CAP FG IN
CN502
SW 5V
IC501 (2/3)
CAPSTAN FG AMP
DRUM FG OUT
(A3)
IC201 (1/2)
SERVO CONTROL
DURM FG
DURM DA
DURM PG
CAP FG
IC251 (3/4)
DRUM ERROR
INTEGRATOR
5V
IC201 (68) REC/PB 4.5Vp-p
IC201 (70) REC/PB 5.0Vp-p
IC251 (4/4)
CAPSTAN ERROR
INTEGRATOR
5V
CAP DA
CAP STOP
STEP PLS
CAP RVS
CAP TRQ1
CAP TRQ2
CAP TRQ3
D252
IC501 (3/3)
REC/PB CONTROL
5V
Vcc
CTL-INDEX
(A6)
CTL-REC (A5)
CTL INDEX
CTL REC
REC CTL AMP
TIMING TEN
3 VALUE DET
H REC CTL
L OPEN PB
REC CTL (A7)
REC CTL
ACE HEAD
CTL HEAD
CN501
CTL (Y)
CTL (X)
BIAS
2.4V
PB CTL AMP
GCA
PB CTL AMP
LEVEL DET
PB CTL LOGIC
PB CTL (A1)
PB CTL
PEAK DET
RTG MMW
DC
(24V)
AMP
GAIN
FOR
CHECK
CTL-STEP (A4)
CTL STEP
RV201
AF SWITCHING POSITION
AF SW POS
RV202
RF SWITCHING POSITION
RF SW POS
RF SWP
IC201 ① REC/PB 5.0V
CV-29 BOARD
(SEE PAGE 4-8)
08
IC201 ⑦ REC 5.0Vp-p (V)
IC201 (67) PB 5.0Vp-p (V)



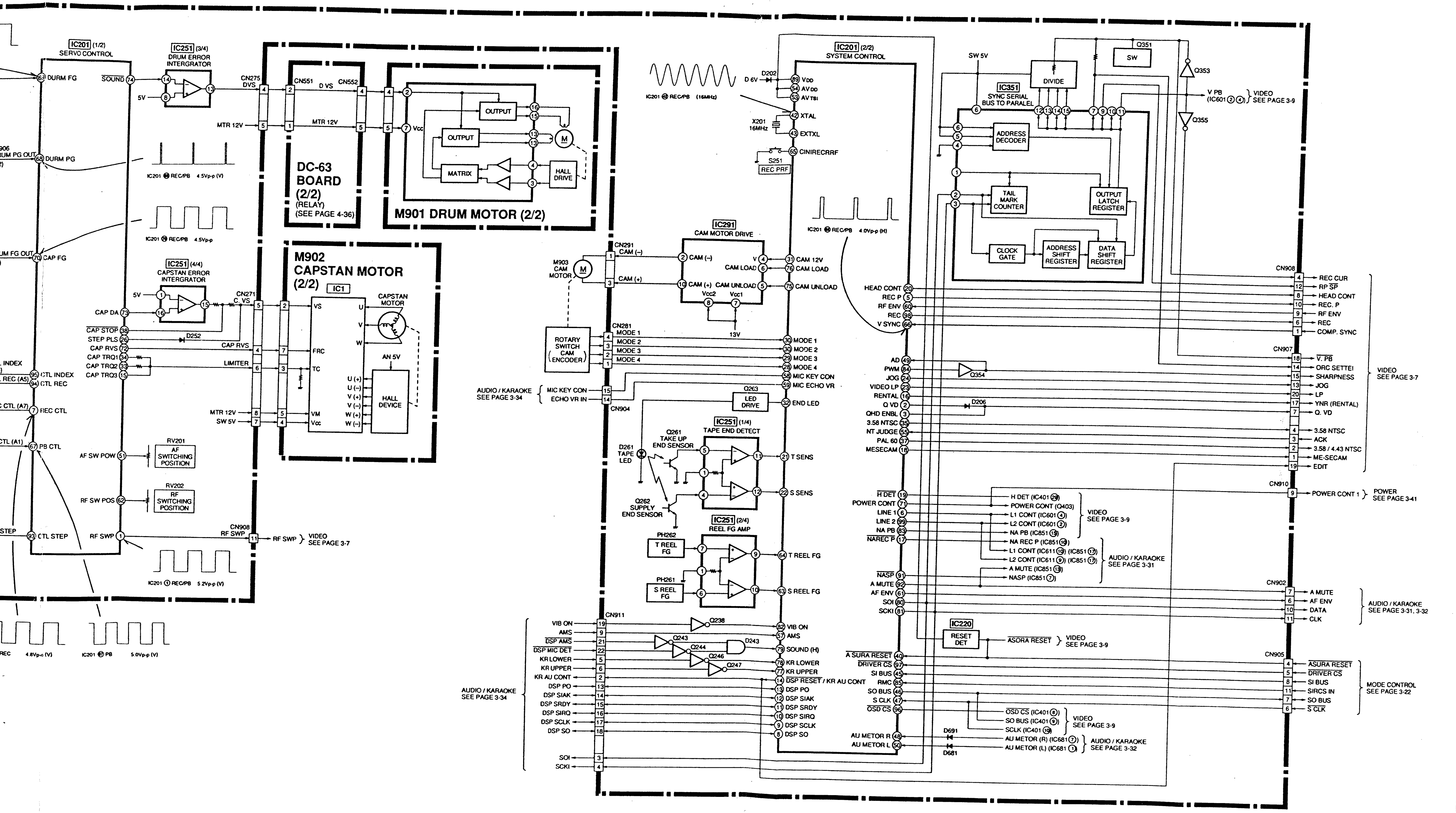
IC201 (1/2) SERVO CONTROL
DURM FG
DURM DA
DURM PG
CAP FG
CAP DA
CAP STOP
STEP PLS
CAP RVS
CAP TRQ1
CAP TRQ2
CAP TRQ3
CTL INDEX
CTL REC
REC CTL
PB CTL
AF SW POS
RF SW POS
RF SWP
CTL STEP
CN906 DRUM PG OUT (A2)
DRUM FG OUT (A3)
CTL-INDEX (A6)
CTL-REC (A5)
REC CTL (A7)
PB CTL (A1)
CTL-STEP (A4)
IC251 (3/4) DRUM ERROR INTEGRATOR
IC251 (4/4) CAPSTAN ERROR INTEGRATOR
5V
MTR 12V
SW 5V
CN275 DVS
CN271 C VS
CAP RVS
LIMITER
D252
IC201 ⑱ REC/PB 4.5Vp-p (V)
IC201 ⑳ REC/PB 5.0Vp-p
IC201 ① REC/PB 5.0Vp-p (V)
IC201 ⑦ REC 5.0Vp-p (V)
IC201 ⑰ PB 5.0Vp-p (V)
RV201 AF SWITCHING POSITION
RV202 RF SWITCHING POSITION
CN908 RF SWP
RF SWP } VIDEO SEE PAGE 3-7
CN551 D VS CN552
MTR 12V
DC-62 BOARD (2/2) (RELAY) (SEE PAGE 4-22)
OUTPUT
OUTPUT
MATRIX
HALL DRIVE
Vcc
M
M901 DRUM MOTOR (2/2)
M902 CAPSTAN MOTOR (2/2)
VS
FRC
TL
VM
Vcc
U
V
W
U (+)
U (−)
V (+)
V (−)
W (+)
W (−)
CAPSTAN MOTOR
AN 5V
HALL DEVICE
IC201 ㊷ REC/PB (16MHz)
D202
D 6V
Vdd
AVdd
AVref
XTAL
EXTXL
X201 16MHz
S251 REC PRF
C IN / REC PRF
IC201 (2/2) SYSTEM CONTROL
IC201 ⑯ REC/PB 3.5Vp-p (H)
IC291 CAM MOTOR DRIVE
CN291 CAM (−) CAM (+)
M903 CAM MOTOR
CAM (−)
CAM (+)
CAM LOAD
CAM UNLOAD
Vcc2 Vcc1
13V
CAM 12V
CAM LOAD
CAM UNLOAD
CN281 MODE 1 MODE 2 MODE 3 MODE 4
ROTARY SWITCH (CAM ENCODER)
MODE 1
MODE 2
MODE 3
MODE 4
Q263 LED DRIVE
END LED
IC251 (1/4) TAPE END DETECT
Q261 TAKE UP END SENSOR
D261 TAPE LED
Q262 SUPPLY END SENSOR
T SENS
S SENS
IC251 (2/4) REEL FG AMP
PH262 T REEL FG
PH261 S REEL FG
T REEL FG
S REEL FG
CN911
VIB ON
AMS
DSP AMS
DSP MIC DET
KR LOWER
KR UPPER
KR AU CONT
DSP PO
DSP SIAK
DSP SRDY
DSP SIRQ
DSP SCLK
DSP SO
SOI
SCKI
AUDIO / KARAOKE SEE PAGE 3-30
Q239
Q243
Q244
Q246
Q247
D243
VIB ON
AMS
SOUND (H)
KR LOWER
KR UPPER
DSP RESET / KR AU CONT
DSP PO
DSP SIAK
DSP SRDY
DSP SIRQ
DSP SCLK
DSP SO
HEAD CONT
REC P
RF ENV
REC
V SYNC
PWM
AD
JOG
VIDEO LP
V PB
YNR
Q VD
Q HD ENBL
3.58NTSC
NT JUDGE
PAL GO
ME SECAM
OSD MUTE
LINE 1
LINE 2
NA PB
NAREC P
NASP
A MUTE
AF ENV
SOI
SCKI
AU METOR R
AU METOR L
A SURA RESET
A SURA CS
SI BUS
SO BUS
S CLK
SW 5V
IC351 SYNC SERIAL BUS TO PARALEL
DIVIDE
SW
Q351
Q355
ADDRESS DECODER
TAIL MARK COUNTER
OUTPUT LATCH REGISTER
CLOCK GATE
ADDRESS SHIFT REGISTER
DATA SHIFT REGISTER
V PB (IC601 ② ④) } VIDEO SEE PAGE 3-9
Q354
D206
Q402
V SYNC (IC402 ⑤)
OSD MUTE (Q401)
L1 CONT (IC601 ②)
L2 CONT (IC601 ④)
} VIDEO SEE PAGE 3-9
NA PB (IC851 ⑱)
NA REC P (IC851 ⑲)
L1 CONT (IC611 ⑲) (IC851 ⑰)
L2 CONT (IC611 ⑨) (IC851 ⑰)
A MUTE (IC851 ⑬)
NASP (IC851 ⑦)
} AUDIO / KARAOKE SEE PAGE 3-27, 3-28
D691
D681
AU METOR (R) (IC681 ⑦)
AU METOR 8L) (IC681 ①)
} AUDIO / KARAOKE SEE PAGE 3-28
SI BUS
S CLK
} VIDEO SEE PAGE 3-9
CN908
REC CUR
RP SP
HEAD CONT
REC. P
RF ENV
REC
COMP. SYNC
CN907
ORC SETTEI
SHARPNESS
JOG
LP
V. PB
YNR (RENTAL)
Q VD
3.58 NTSC
ACK
3.58 / 4.43 NTSC
ME-SECAM
EDIT
VIDEO SEE PAGE 3-7
CN902
A MUTE
AF ENV
DATA
CLK
AUDIO / KARAOKE SEE PAGE 3-27, 3-28
CN905
ASURA RESET
ASURA CS
SI BUS
CN904
SO BUS
S CLK
TIMER / TUNER / MODE CONTROL SEE PAGE 3-20

3-3-2. SLV-KH3CH/KH3ME/KH3PS MODEL

- The boards which signals only pass through may be omitted.

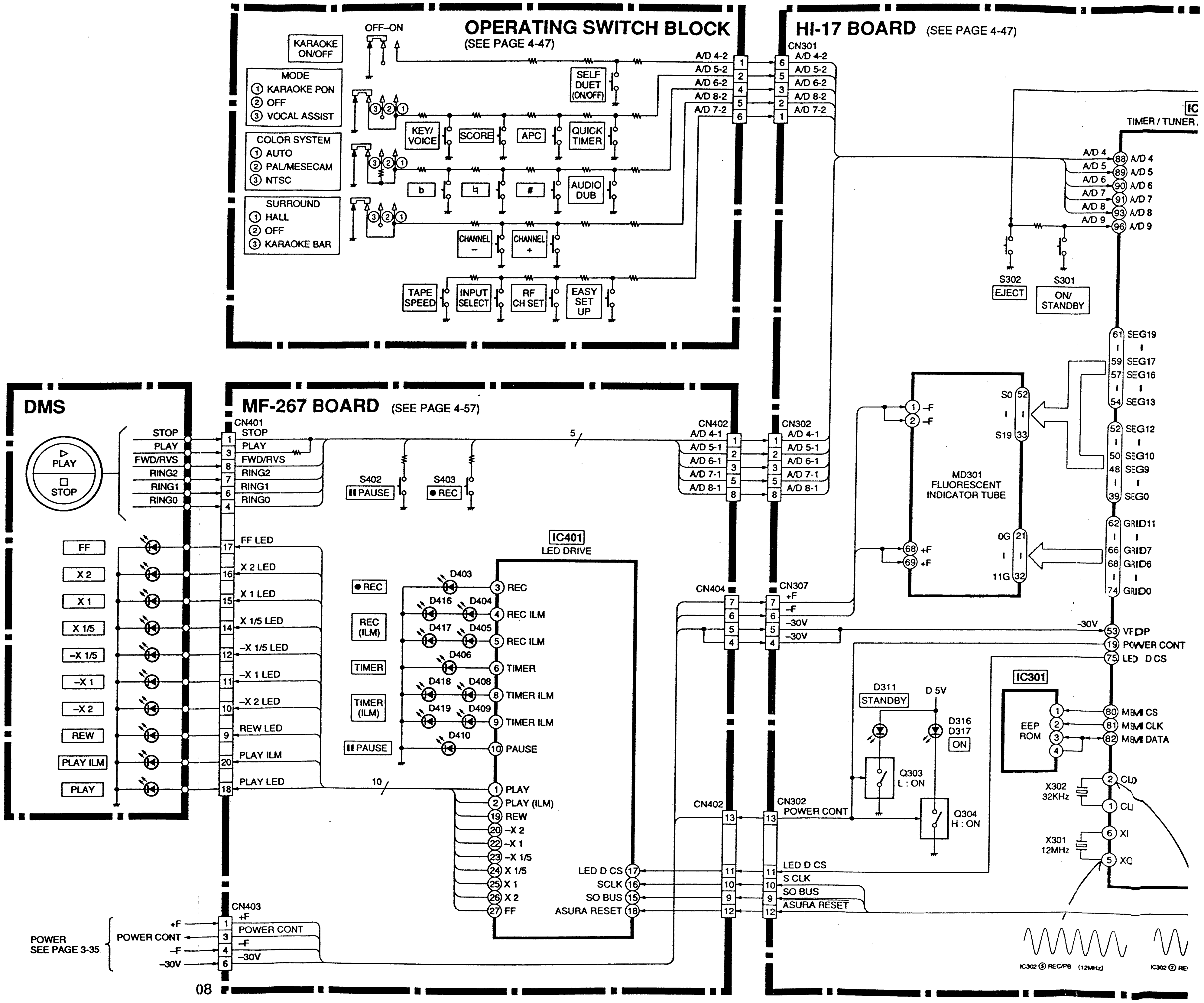


MA-242 BOARD
(SERVO/SYSCON)
(SEE PAGE 4-33)
M901 DRAM MOTOR (1/2)
DRAM FG
DRAM PG
DC-63 BOARD (1/2)
(RELAY)
(SEE PAGE 4-36)
CN552
CN551
D FG
D PG
CN275
M902 CAPSTAN MOTOR (1/2)
CAPSTAN FG
CAP FG
CN271
CN906
CAP FG IN
DRUM PG IN
CN502
SW 5V
IC501 (1/3)
WAVE SHAPER
IC501 (2/3)
CAPSTAN FG AMP
IC501 (3/3)
REC/PB CONTROL
5V
Vcc
REC CTL AMP
TIMING TEN
3 VALUE DET
H REC CTL
L OPEN PB
PB CTL AMP
GCA
LEVEL DET
PB CTL LOGIC
PEAK DET
RTG MMW
DC (24V)
AMP GAIN
FOR CHECK
ACE HEAD
CTL HEAD
CN501
CTL (Y)
CTL (X)
CV-30 BOARD
(SEE PAGE 4-8)
08
IC201 (1/2)
SERVO CONTROL
IC201 ⑥ REC/PB 5Vp-p
DURM FG
SOUND
DRUM PG OUT (A2)
DURM PG
IC201 ⑥ REC/PB 4.5Vp-p (V)
DRUM FG OUT (A2)
CAP FG
IC201 ⑦ REC/PB 4.5Vp-p
CAP DA
CAP STOP
STEP PLS
CAP RVS
CAP TRQ1
CAP TRQ2
CAP TRQ3
D252
CTL INDEX (AG)
CTL REC (A5)
CTL INDEX
CTL REC
REC CTL (A7)
REC CTL
PB CTL (A1)
PB CTL
CTL STEP (A4)
CTL STEP
AF SW POW
RV201 AF SWITCHING POSITION
RF SW POS
RV202 RF SWITCHING POSITION
RF SWP
CN908 RF SWP
RF SWP
VIDEO SEE PAGE 3-7
IC201 ① REC/PB 5.2Vp-p (V)
IC201 ⑦ REC 4.8Vp-p (V)
IC201 ⑦ PB 5.0Vp-p (V)
IC251 (3/4)
DRUM ERROR INTERGRATOR
IC251 (4/4)
CAPSTAN ERROR INTERGRATOR
5V
CN275 DVS
MTR 12V
CN271 C VS
CAP RVS
LIMITER
MTR 12V
SW 5V
CN551
CN552
D VS
MTR 12V
DC-63 BOARD (2/2)
(RELAY)
(SEE PAGE 4-36)
OUTPUT
OUTPUT
MATRIX
HALL DRIVE
Vcc
M
M901 DRUM MOTOR (2/2)
M902 CAPSTAN MOTOR (2/2)
IC1
VS
FRC
TC
VM
Vcc
U
V
W
U (+)
U (-)
V (+)
V (-)
W (+)
W (-)
CAPSTAN MOTOR
AN 5V
HALL DEVICE
IC201 ⑥ REC/PB (16MHz)
D202
D 6V
X201 16MHz
S251
REC PF
IC291
CAM MOTOR DRIVE
CN291
CAM (-)
CAM (+)
M903 CAM MOTOR
CAM LOAD
CAM UNLOAD
Vcc2
Vcc1
13V
CN281
MODE 1
MODE 2
MODE 3
MODE 4
ROTARY SWITCH (CAM ENCODER)
AUDIO / KARAOKE SEE PAGE 3-34
MIC KEY CON
ECHO VR IN
CN904
Q203 LED DRIVE
IC251 (1/4)
TAPE END DETECT
Q261 TAKE UP END SENSOR
D261 TAPE LED
Q262 SUPPLY END SENSOR
IC251 (2/4)
REEL FG AMP
PH262 T REEL FG
PH261 S REEL FG
CN911
VIB ON
AMS
DSP AMS
DSP MIC DET
KR LOWER
KR UPPER
KR AU CONT
DSP PO
DSP SIAK
DSP SRDY
DSP SIRQ
DSP SCLK
DSP SO
SOI
SCKI
Q238
Q243
Q244
Q246
Q247
D243
AUDIO / KARAOKE SEE PAGE 3-34


IC201 (1/2) SERVO CONTROL
DURM FG
SOUND
DURM PG
CAP FG
CAP DA
CAP STOP
STEP PLS
CAP RVS
CAP TRQ1
CAP TRQ2
CAP TRQ3
CTL INDEX
CTL REC
REC CTL
PB CTL
AF SW POW
RF SW POS
RF SWP
CTL STEP
IC251 (3/4) DRUM ERROR INTERGRATOR
IC251 (4/4) CAPSTAN ERROR INTERGRATOR
CN275 DVS
MTR 12V
CN271 C VS
CAP RVS
LIMITER
D252
MTR 12V
SW 5V
RV201 AF SWITCHING POSITION
RV202 RF SWITCHING POSITION
CN908 RF SWP
RF SWP } VIDEO SEE PAGE 3-7
IC201 ⑥⑧ REC/PB 4.5Vp-p (V)
IC201 ⑦⓪ REC/PB 4.5Vp-p
IC201 ① REC/PB 5.2Vp-p (V)
REC 4.8Vp-p (V)
IC201 ⑥⑦ PB 5.0Vp-p (V)
CN551
D VS
CN552
MTR 12V
DC-63 BOARD (2/2) (RELAY) (SEE PAGE 4-36)
OUTPUT
OUTPUT
MATRIX
HALL DRIVE
Vcc
M
M901 DRUM MOTOR (2/2)
M902 CAPSTAN MOTOR (2/2)
IC1
VS
FRC
TC
VM
Vcc
U
V
W
U (+)
U (−)
V (+)
V (−)
W (+)
W (−)
CAPSTAN MOTOR
AN 5V
HALL DEVICE
IC201 ⑤③ REC/PB (16MHz)
D202
D 6V
X201 16MHz
S251 REC PRF
IC201 (2/2) SYSTEM CONTROL
VDD
AVDD
AVTSI
XTAL
EXTXL
CINIRECRRF
IC201 ⑥⑤ REC/PB 4.0Vp-p (H)
M903 CAM MOTOR
CN291 CAM (−) CAM (+)
IC291 CAM MOTOR DRIVE
CAM 12V
CAM LOAD
CAM UNLOAD
Vcc2
Vcc1
13V
ROTARY SWITCH (CAM ENCODER)
CN281 MODE 1 MODE 2 MODE 3 MODE 4
MODE 1
MODE 2
MODE 3
MODE 4
AUDIO / KARAOKE SEE PAGE 3-34
MIC KEY CON
ECHO VR IN
CN904
MIC KEY CON
MIC ECHO VR
Q263 LED DRIVE
END LED
IC251 (1/4) TAPE END DETECT
Q261 TAKE UP END SENSOR
D261 TAPE LED
Q262 SUPPLY END SENSOR
T SENS
S SENS
IC251 (2/4) REEL FG AMP
PH262 T REEL FG
PH261 S REEL FG
T REEL FG
S REEL FG
CN911
VIB ON
AMS
DSP AMS
DSP MIC DET
KR LOWER
KR UPPER
KR AU CONT
DSP PO
DSP SIAK
DSP SRDY
DSP SIRQ
DSP SCLK
DSP SO
SOI
SCKI
AUDIO / KARAOKE SEE PAGE 3-34
Q238
Q243
Q244
Q246
Q247
D243
VIB ON
AMS
SOUND (H)
KR LOWER
KR UPPER
DSP RESET / KR AU CONT
DSP PO
DSP SIAK
DSP SRDY
DSP SIRQ
DSP SCLK
DSP SO
HEAD CONT
REC P
RF ENV
REC
V SYNC
AD
PWM
JOG
VIDEO LP
RENTAL
Q VD
OHD ENBL
3.58 NTSC
NT JUDGE
PAL 60
MESECAM
H DET
POWER CONT
LINE 1
LINE 2
NA PB
NAREC P
NASP
A MUTE
AF ENV
SOI
SCKI
A SURA RESET
DRIVER CS
SI BUS
RMC
SO BUS
S CLK
OSD CS
AU METOR R
AU METOR L
SW 5V
IC351 SYNC SERIAL BUS TO PARALEL
DIVIDE
SW
Q351
Q353
Q355
V PB (IC601 ② ④) } VIDEO SEE PAGE 3-9
ADDRESS DECODER
TAIL MARK COUNTER
OUTPUT LATCH REGISTER
CLOCK GATE
ADDRESS SHIFT REGISTER
DATA SHIFT REGISTER
CN908
REC CUR
RP SF
HEAD CONT
REC. P
RF ENV
REC
COMP. SYNC
CN907
V. PB
ORC SETTEI
SHARPNESS
JOG
LP
YNR (RENTAL)
Q. VD
3.58 NTSC
ACK
3.58 / 4.43 NTSC
ME-SECAM
EDIT
VIDEO SEE PAGE 3-7
Q354
D206
CN910
POWER CONT 1 } POWER SEE PAGE 3-41
H DET (IC401 ㉙)
POWER CONT (Q403)
L1 CONT (IC601 ④)
L2 CONT (IC601 ②)
VIDEO SEE PAGE 3-9
NA PB (IC851 ⑬)
NA REC P (IC851 ⑲)
L1 CONT (IC611 ⑬) (IC851 ⑰)
L2 CONT (IC611 ⑨) (IC851 ⑦)
A MUTE (IC851 ⑬)
NASP (IC851 ⑦)
AUDIO / KARAOKE SEE PAGE 3-31
CN902
A MUTE
AF ENV
DATA
CLK
AUDIO / KARAOKE SEE PAGE 3-31, 3-32
IC220 RESET DET
ASORA RESET } VIDEO SEE PAGE 3-9
CN905
ASURA RESET
DRIVER CS
SI BUS
SIRCS IN
SO BUS
S CLK
MODE CONTROL SEE PAGE 3-22
OSD CS (IC401 ⑧)
SO BUS (IC401 ⑨)
SCLK (IC401 ⑩)
VIDEO SEE PAGE 3-9
D691
D681
AU METOR (R) (IC681 ⑦)
AU METOR (L) (IC681 ①)
AUDIO / KARAOKE SEE PAGE 3-32

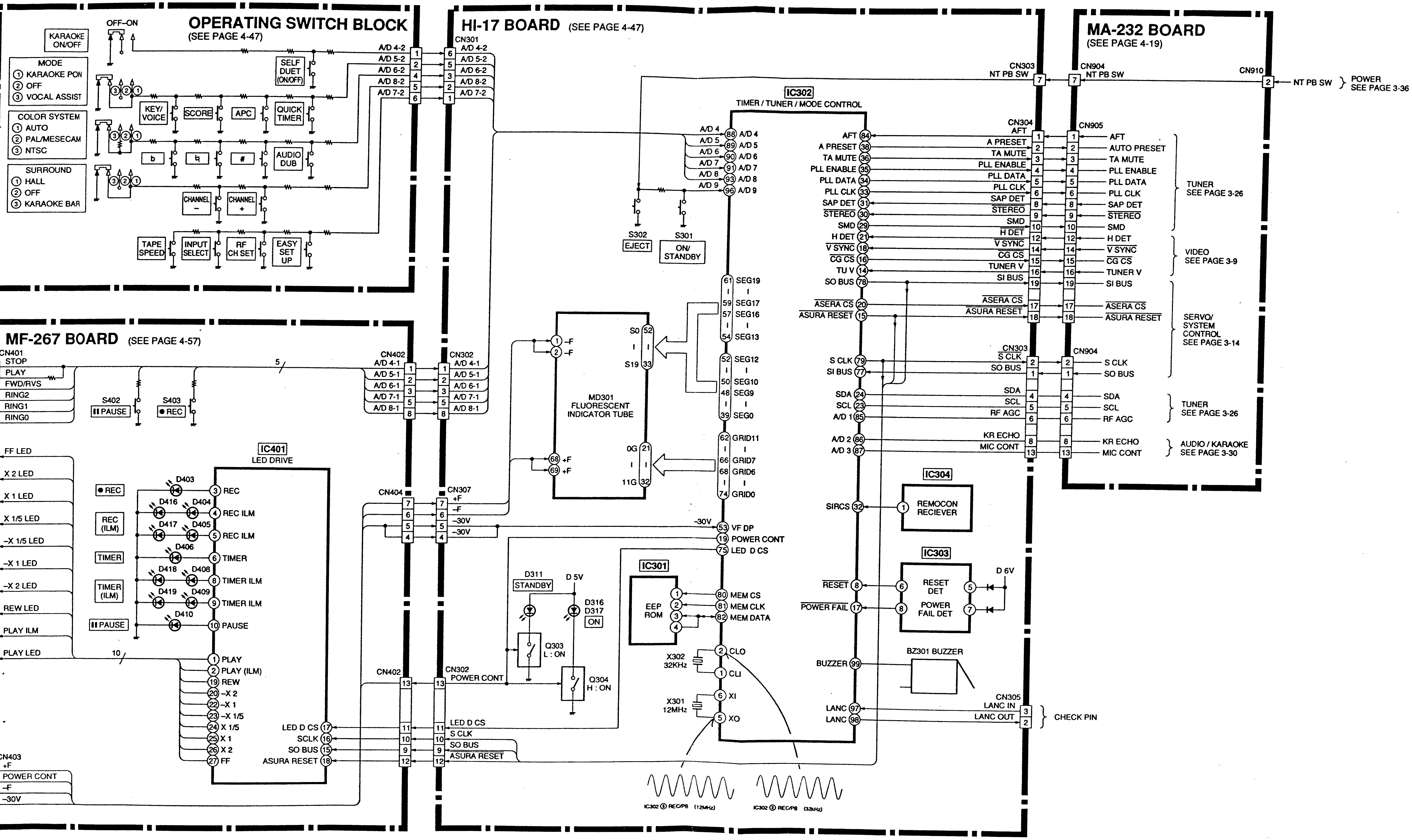
3-4. TIMER/TUNER/MODE CONTROL BLOCK DIAGRAM (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

- The boards which signals only pass through may be omitted.


OPERATING SWITCH BLOCK
(SEE PAGE 4-47)
KARAOKE ON/OFF
OFF–ON
MODE
① KARAOKE PON
② OFF
③ VOCAL ASSIST
COLOR SYSTEM
① AUTO
② PAL/MESECAM
③ NTSC
SURROUND
① HALL
② OFF
③ KARAOKE BAR
SELF DUET (ON/OFF)
KEY/VOICE
SCORE
APC
QUICK TIMER
AUDIO DUB
CHANNEL –
CHANNEL +
TAPE SPEED
INPUT SELECT
RF CH SET
EASY SET UP
A/D 4-2
A/D 5-2
A/D 6-2
A/D 8-2
A/D 7-2
HI-17 BOARD (SEE PAGE 4-47)
CN301
IC
TIMER / TUNER
A/D 4
A/D 5
A/D 6
A/D 7
A/D 8
A/D 9
S302
EJECT
S301
ON/STANDBY
SEG19
SEG17
SEG16
SEG13
SEG12
SEG10
SEG9
SEG0
GRID11
GRID7
GRID6
GRID0
MD301
FLUORESCENT INDICATOR TUBE
SO
S19
0G
11G
–F
+F
VFDP
POWER CONT
LED D CS
IC301
EEP ROM
MEM CS
MEM CLK
MEM DATA
X302 32KHz
X301 12MHz
CLO
CLI
XI
XO
D311
STANDBY
D 5V
D316
D317
ON
Q303 L : ON
Q304 H : ON
CN302
CN307
POWER CONT
S CLK
SO BUS
ASURA RESET
-30V
IC302 ⑤ REC/PB (12MHz)
IC302 ⑥ RE
DMS
PLAY
STOP
FWD/RVS
RING2
RING1
RING0
FF
X 2
X 1
X 1/5
–X 1/5
–X 1
–X 2
REW
PLAY ILM
MF-267 BOARD (SEE PAGE 4-57)
CN401
FF LED
X 2 LED
X 1 LED
X 1/5 LED
–X 1/5 LED
–X 1 LED
–X 2 LED
REW LED
PLAY ILM
PLAY LED
S402
II PAUSE
S403
● REC
IC401
LED DRIVE
REC
REC ILM
TIMER
TIMER ILM
PAUSE
TIMER (ILM)
D403
D404
D405
D406
D408
D409
D410
D416
D417
D418
D419
PLAY (ILM)
CN402
A/D 4-1
A/D 5-1
A/D 6-1
A/D 7-1
A/D 8-1
CN404
CN403
+F
–F
–30V
POWER
SEE PAGE 3-35
08

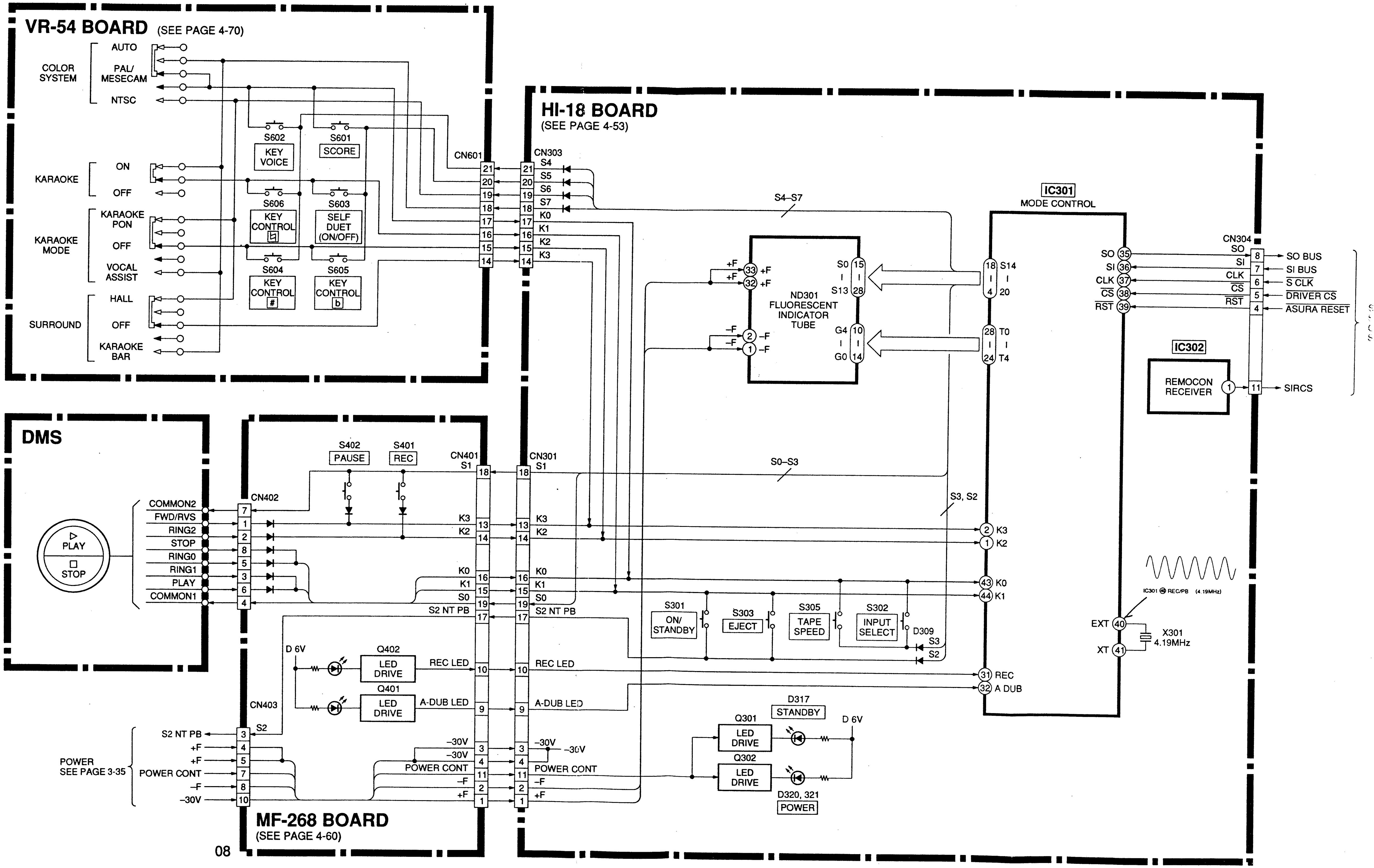
/MODE CONTROL BLOCK DIAGRAM
K862PS/K872MN/K872PS MODEL)

s only pass through may be omitted.

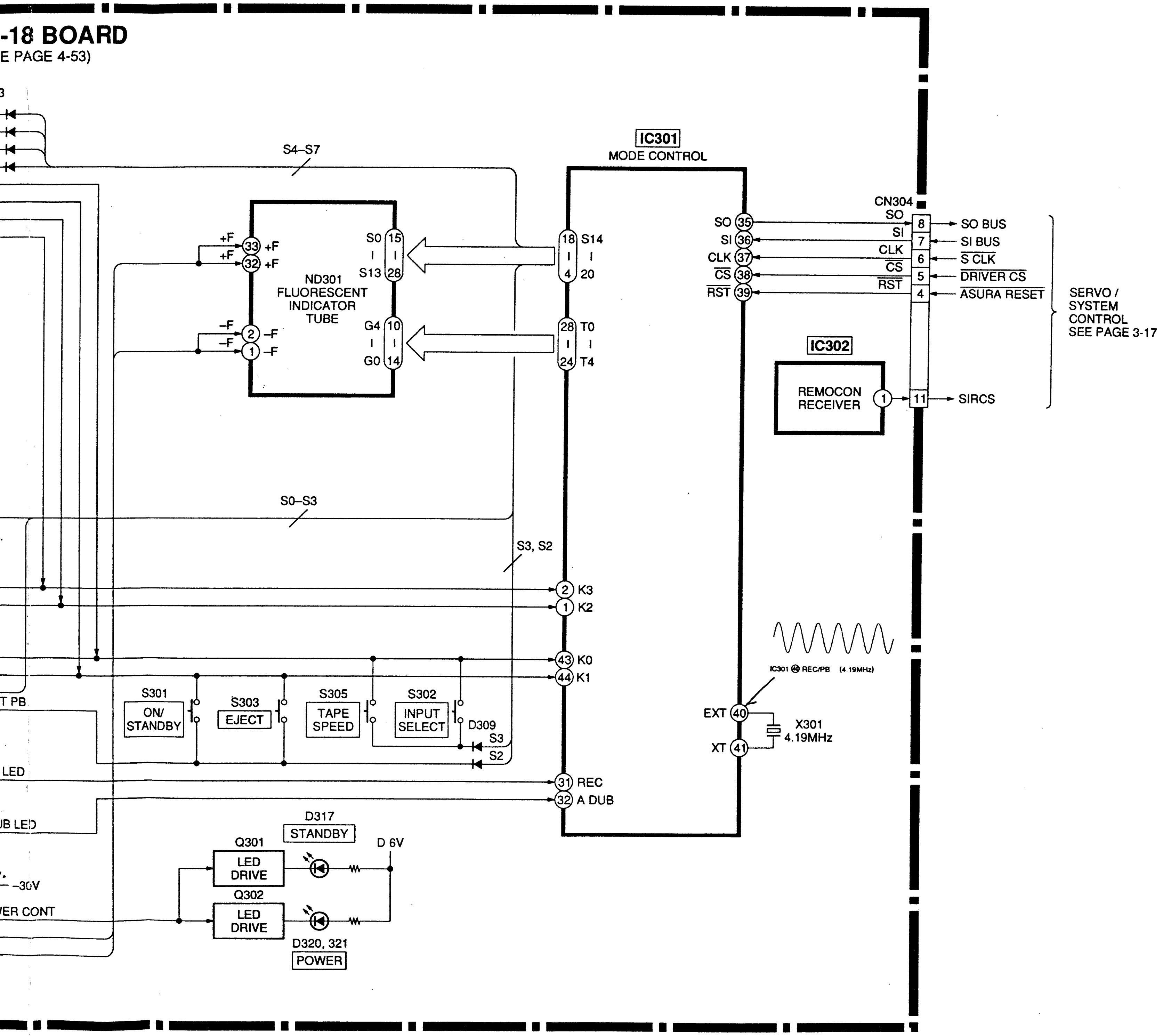

OPERATING SWITCH BLOCK
(SEE PAGE 4-47)
KARAOKE ON/OFF
OFF–ON
MODE
① KARAOKE PON
② OFF
③ VOCAL ASSIST
COLOR SYSTEM
① AUTO
② PAL/MESECAM
③ NTSC
SURROUND
① HALL
② OFF
③ KARAOKE BAR
SELF DUET (ON/OFF)
KEY/ VOICE
SCORE
APC
QUICK TIMER
AUDIO DUB
CHANNEL –
CHANNEL +
TAPE SPEED
INPUT SELECT
RF CH SET
EASY SET UP
A/D 4-2
A/D 5-2
A/D 6-2
A/D 8-2
A/D 7-2
HI-17 BOARD (SEE PAGE 4-47)
CN301
IC302
TIMER / TUNER / MODE CONTROL
A/D 4 88 A/D 4
A/D 5 89 A/D 5
A/D 6 90 A/D 6
A/D 7 91 A/D 7
A/D 8 93 A/D 8
A/D 9 96 A/D 9
S302 EJECT
S301 ON/ STANDBY
61 SEG19
59 SEG17
57 SEG16
54 SEG13
52 SEG12
50 SEG10
48 SEG9
39 SEG0
62 GRID11
66 GRID7
68 GRID6
74 GRID0
MD301 FLUORESCENT INDICATOR TUBE
S0 52
S19 33
0G 21
11G 32
① –F
② –F
68 +F
69 +F
AFT 84
A PRESET 38
TA MUTE 36
PLL ENABLE 35
PLL DATA 34
PLL CLK 33
SAP DET 31
STEREO 30
SMD 29
H DET 21
V SYNC 18
CG CS 16
TU V 14
SO BUS 78
ASERA CS 20
ASURA RESET 15
S CLK 79
SI BUS 77
SDA 24
SCL 23
A/D 1 85
A/D 2 86
A/D 3 87
SIRCS 32
IC304
REMOCON RECIEVER
IC303
RESET DET
POWER FAIL DET
D 6V
RESET 8
POWER FAIL 17
BUZZER 99
BZ301 BUZZER
LANC 97
LANC 98
CN305
LANC IN
LANC OUT
CHECK PIN
CN303 NT PB SW
CN304
AFT
A PRESET
TA MUTE
PLL ENABLE
PLL DATA
PLL CLK
SAP DET
STEREO
SMD
H DET
V SYNC
CG CS
TUNER V
SI BUS
ASERA CS
ASURA RESET
CN303
S CLK
SO BUS
SDA
SCL
RF AGC
KR ECHO
MIC CONT
-30V
53 VF DP
19 POWER CONT
75 LED D CS
IC301
EEP ROM
80 MEM CS
81 MEM CLK
82 MEM DATA
X302 32KHz
X301 12MHz
2 CLO
1 CLI
6 XI
5 XO
IC302 ⑥ REC/PB (12MHz)
IC302 ② REC/PB (32kHz)
D311 STANDBY
D 5V
D316 D317 ON
Q303 L : ON
Q304 H : ON
MA-232 BOARD
(SEE PAGE 4-19)
CN904 NT PB SW
CN910
NT PB SW
POWER SEE PAGE 3-36
CN905
AFT
AUTO PRESET
TA MUTE
PLL ENABLE
PLL DATA
PLL CLK
SAP DET
STEREO
SMD
H DET
V SYNC
CG CS
TUNER V
SI BUS
ASERA CS
ASURA RESET
TUNER SEE PAGE 3-26
VIDEO SEE PAGE 3-9
SERVO/ SYSTEM CONTROL SEE PAGE 3-14
CN904
S CLK
SO BUS
SDA
SCL
RF AGC
TUNER SEE PAGE 3-26
KR ECHO
MIC CONT
AUDIO / KARAOKE SEE PAGE 3-30
MF-267 BOARD (SEE PAGE 4-57)
CN401
STOP
PLAY
FWD/RVS
RING2
RING1
RING0
S402 II PAUSE
S403 ● REC
CN402
A/D 4-1
A/D 5-1
A/D 6-1
A/D 7-1
A/D 8-1
CN302
IC401
LED DRIVE
FF LED
X 2 LED
X 1 LED
X 1/5 LED
–X 1/5 LED
–X 1 LED
–X 2 LED
REW LED
PLAY ILM
PLAY LED
● REC
REC (ILM)
TIMER
TIMER (ILM)
II PAUSE
D403 D416 D404 D417 D405 D406 D418 D408 D419 D409 D410
3 REC
4 REC ILM
5 REC ILM
6 TIMER
8 TIMER ILM
9 TIMER ILM
10 PAUSE
1 PLAY
2 PLAY (ILM)
19 REW
20 –X 2
22 –X 1
23 –X 1/5
24 X 1/5
25 X 1
26 X 2
27 FF
LED D CS 17
SCLK 16
SO BUS 15
ASURA RESET 18
CN404
CN307
+F
–F
–30V
–30V
CN402
CN302 POWER CONT
LED D CS
S CLK
SO BUS
ASURA RESET
CN403
+F
POWER CONT
–F
–30V

3-5. MODE CONTROL BLOCK DIAGRAM (SLV-KH3CH/KH3ME/KH3PS MODEL)

- The boards which signals only pass through may be omitted.

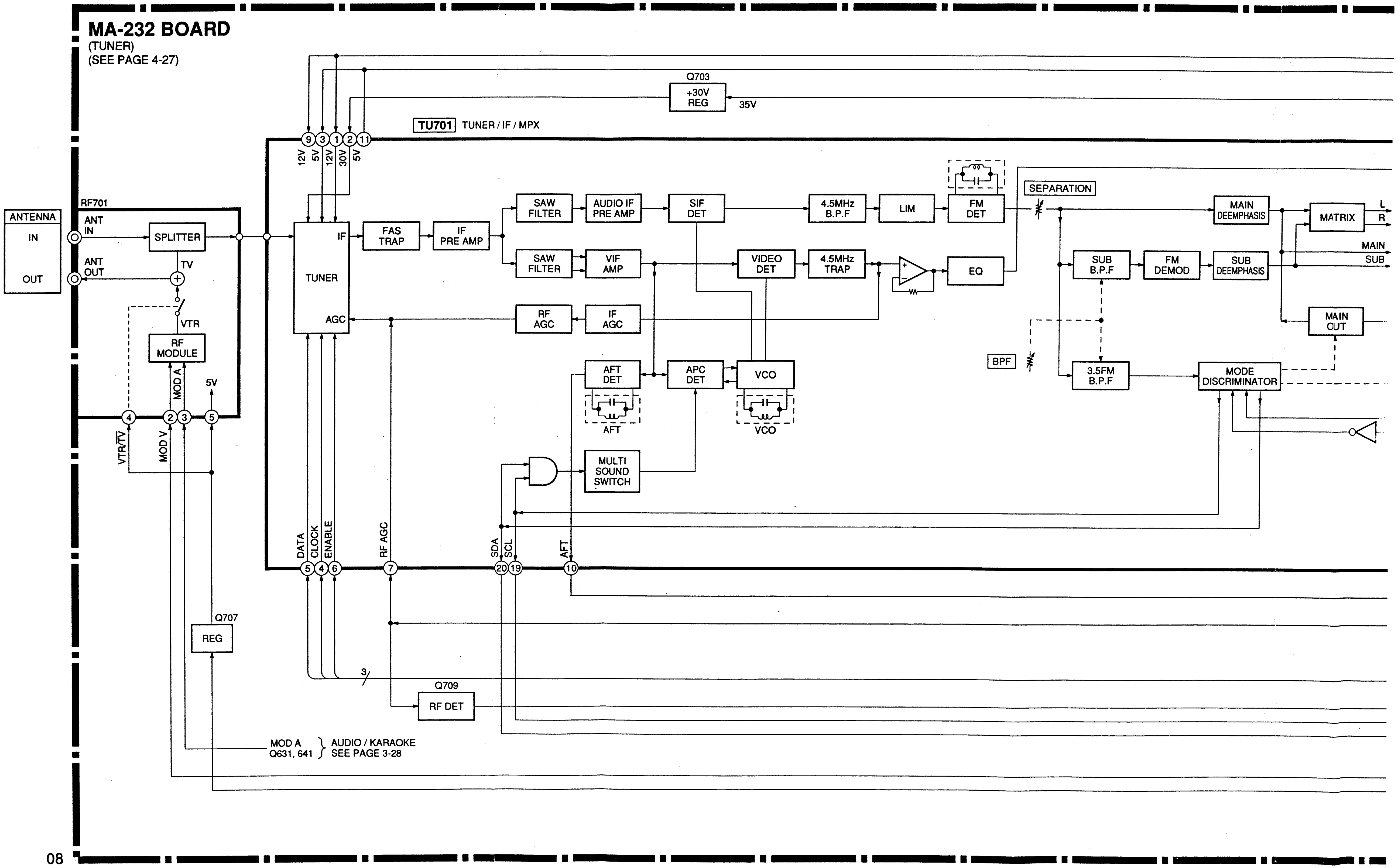


VR-54 BOARD (SEE PAGE 4-70)
COLOR SYSTEM
AUTO
PAL/ MESECAM
NTSC
KARAOKE
ON
OFF
KARAOKE MODE
KARAOKE PON
OFF
VOCAL ASSIST
SURROUND
HALL
OFF
KARAOKE BAR
S602 KEY VOICE
S601 SCORE
S606 KEY CONTROL ♮
S603 SELF DUET (ON/OFF)
S604 KEY CONTROL #
S605 KEY CONTROL b
CN601
HI-18 BOARD (SEE PAGE 4-53)
CN303
S4
S5
S6
S7
KO
K1
K2
K3
S4–S7
+F
-F
ND301 FLUORESCENT INDICATOR TUBE
S0
S13
G4
G0
IC301 MODE CONTROL
S14
20
T0
T4
SO
SI
CLK
CS
RST
CN304
SO BUS
SI BUS
S CLK
DRIVER CS
ASURA RESET
IC302
REMOCON RECEIVER
SIRCS
IC301 ㊵ REC/PB (4.19MHz)
EXT
XT
X301 4.19MHz
DMS
PLAY
STOP
COMMON2
FWD/RVS
RING2
STOP
RING0
RING1
PLAY
COMMON1
CN402
S402 PAUSE
S401 REC
CN401
S1
K3
K2
K0
K1
S0
S2 NT PB
CN301
S0–S3
S3, S2
K3
K2
KO
K1
S301 ON/ STANDBY
S303 EJECT
S305 TAPE SPEED
S302 INPUT SELECT
D309
S3
S2
D 6V
Q402 LED DRIVE
REC LED
Q401 LED DRIVE
A-DUB LED
REC
A DUB
D317 STANDBY
Q301 LED DRIVE
Q302 LED DRIVE
D 6V
D320, 321 POWER
CN403
S2
S2 NT PB
+F
POWER CONT
-F
-30V
POWER SEE PAGE 3-35
-30V
POWER CONT
MF-268 BOARD (SEE PAGE 4-60)

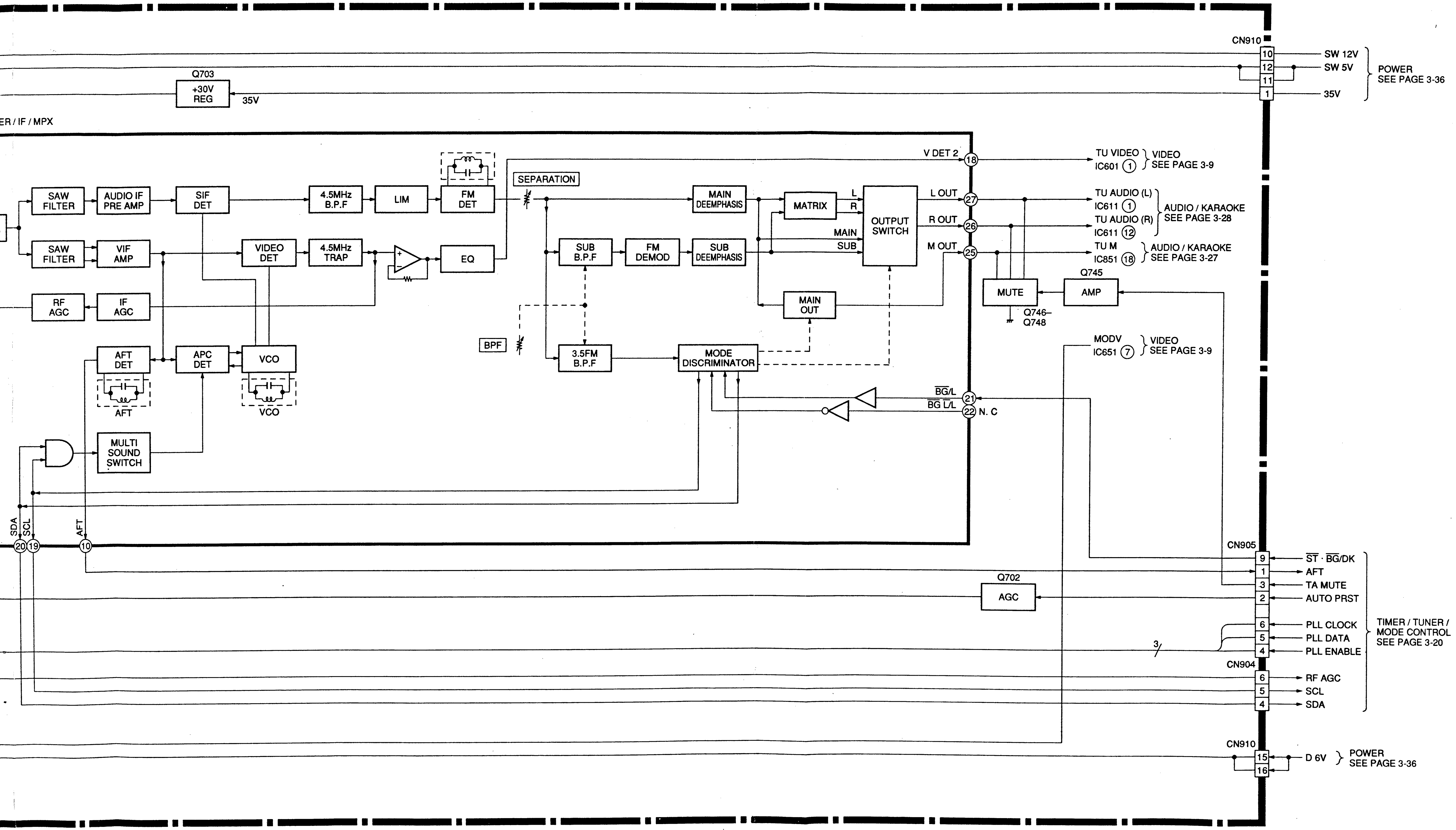

-18 BOARD
E PAGE 4-53)
S4–S7
IC301
MODE CONTROL
CN304
ND301
FLUORESCENT
INDICATOR
TUBE
+F
+F
-F
-F
S0 15
S13 28
G4 10
G0 14
18 S14
4 20
28 T0
24 T4
SO 35
SI 36
CLK 37
CS 38
RST 39
SO
SI
CLK
CS
RST
8 SO BUS
7 SI BUS
6 S CLK
5 DRIVER CS
4 ASURA RESET
SERVO / SYSTEM CONTROL SEE PAGE 3-17
IC302
REMOCON RECEIVER
11 SIRCS
S0–S3
S3, S2
2 K3
1 K2
43 K0
44 K1
IC301 40 REC/PB (4.19MHz)
EXT 40
XT 41
X301 4.19MHz
S301 ON/STANDBY
S303 EJECT
S305 TAPE SPEED
S302 INPUT SELECT
D309
S3
S2
31 REC
32 A DUB
T PB
LED
UB LED
-30V
ER CONT
Q301 LED DRIVE
Q302 LED DRIVE
D317 STANDBY
D 6V
D320, 321 POWER

3-6. TUNER BLOCK DIAGRAM (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

• The boards which signals only pass through may be omitted.


MA-232 BOARD
(TUNER)
(SEE PAGE 4-27)
ANTENNA
IN
OUT
RF701
ANT IN
ANT OUT
SPLITTER
TV
VTR
RF MODULE
MOD A
5V
VTR/TV
MOD V
Q707
REG
Q703
+30V REG
35V
TU701
TUNER / IF / MPX
12V
5V
12V
30V
5V
TUNER
IF
AGC
FAS TRAP
IF PRE AMP
SAW FILTER
AUDIO IF PRE AMP
SIF DET
4.5MHz B.P.F
LIM
FM DET
SAW FILTER
VIF AMP
VIDEO DET
4.5MHz TRAP
EQ
RF AGC
IF AGC
AFT DET
AFT
APC DET
VCO
VCO
MULTI SOUND SWITCH
SEPARATION
MAIN DEEMPHASIS
MATRIX
L
R
MAIN
SUB
SUB B.P.F
FM DEMOD
SUB DEEMPHASIS
MAIN OUT
BPF
3.5FM B.P.F
MODE DISCRIMINATOR
DATA
CLOCK
ENABLE
RF AGC
SDA
SCL
AFT
3
Q709
RF DET
MOD A
Q631, 641
AUDIO / KARAOKE
SEE PAGE 3-28

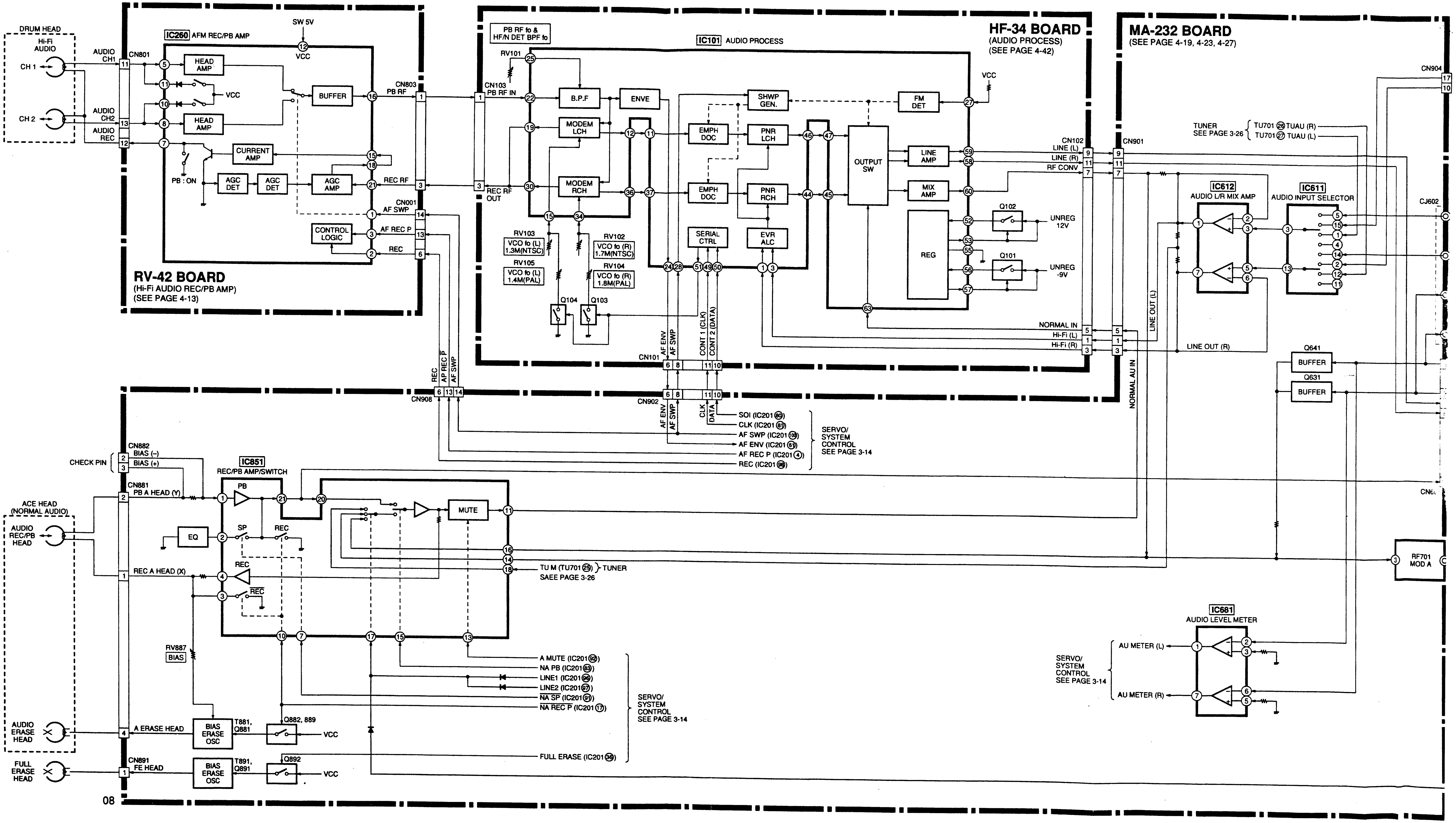
)

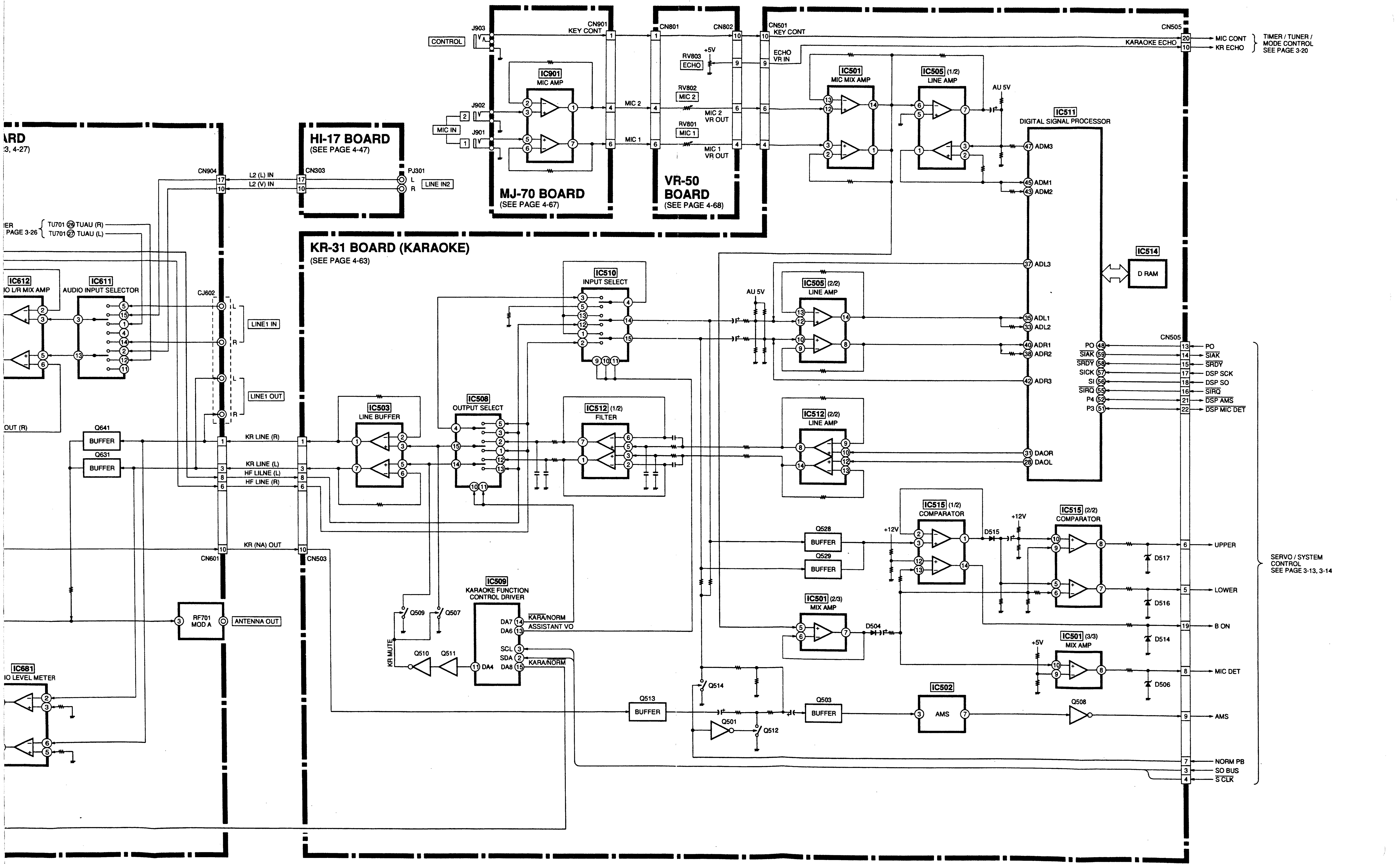

ER / IF / MPX
Q703
+30V REG
35V
CN910
10
12
11
1
SW 12V
SW 5V
35V
POWER SEE PAGE 3-36
SAW FILTER
AUDIO IF PRE AMP
SIF DET
4.5MHz B.P.F
LIM
FM DET
SEPARATION
MAIN DEEMPHASIS
MATRIX
L
R
MAIN
SUB
OUTPUT SWITCH
V DET 2
18
L OUT
27
R OUT
26
M OUT
25
TU VIDEO IC601 ①
VIDEO SEE PAGE 3-9
TU AUDIO (L) IC611 ①
TU AUDIO (R) IC611 ⑫
AUDIO / KARAOKE SEE PAGE 3-28
TU M IC851 ⑱
AUDIO / KARAOKE SEE PAGE 3-27
SAW FILTER
VIF AMP
VIDEO DET
4.5MHz TRAP
EQ
SUB B.P.F
FM DEMOD
SUB DEEMPHASIS
Q745
MUTE
AMP
Q746–Q748
RF AGC
IF AGC
MAIN OUT
BPF
AFT DET
APC DET
VCO
3.5FM B.P.F
MODE DISCRIMINATOR
MODV IC651 ⑦
VIDEO SEE PAGE 3-9
AFT
VCO
BG/L
21
BG L/L
22
N. C
MULTI SOUND SWITCH
SDA
SCL
AFT
20
19
10
CN905
9
1
3
2
6
5
4
ST · BG/DK
AFT
TA MUTE
AUTO PRST
PLL CLOCK
PLL DATA
PLL ENABLE
Q702
AGC
3
CN904
6
5
4
RF AGC
SCL
SDA
TIMER / TUNER / MODE CONTROL SEE PAGE 3-20
CN910
15
16
D 6V
POWER SEE PAGE 3-36

3-7. AUDIO/KARAOKE BLOCK DIAGRAMS

3-7-1. SLV-K862CH/K862PS/K872MN/K872PS MODEL

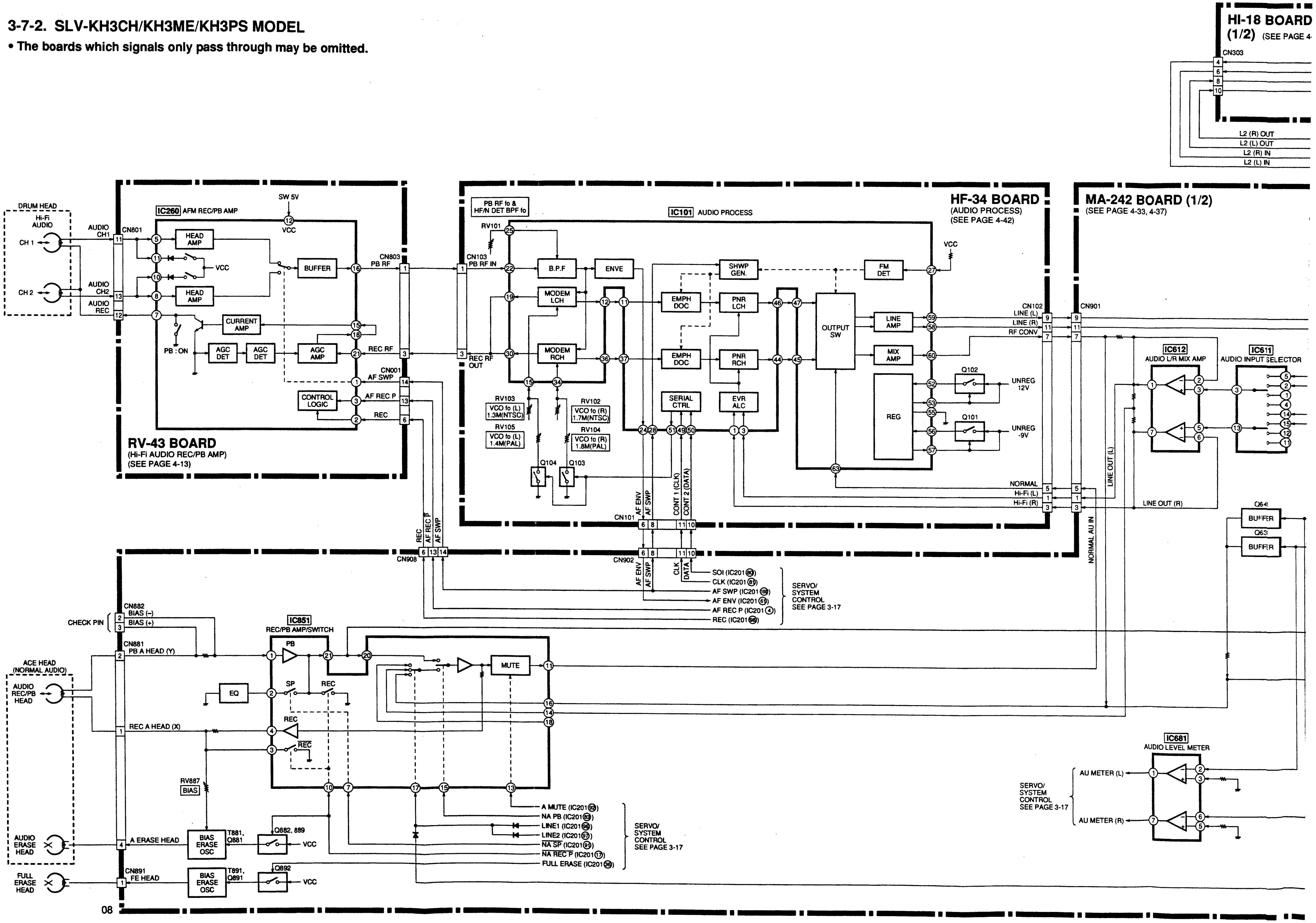
• The boards which signals only pass through may be omitted.

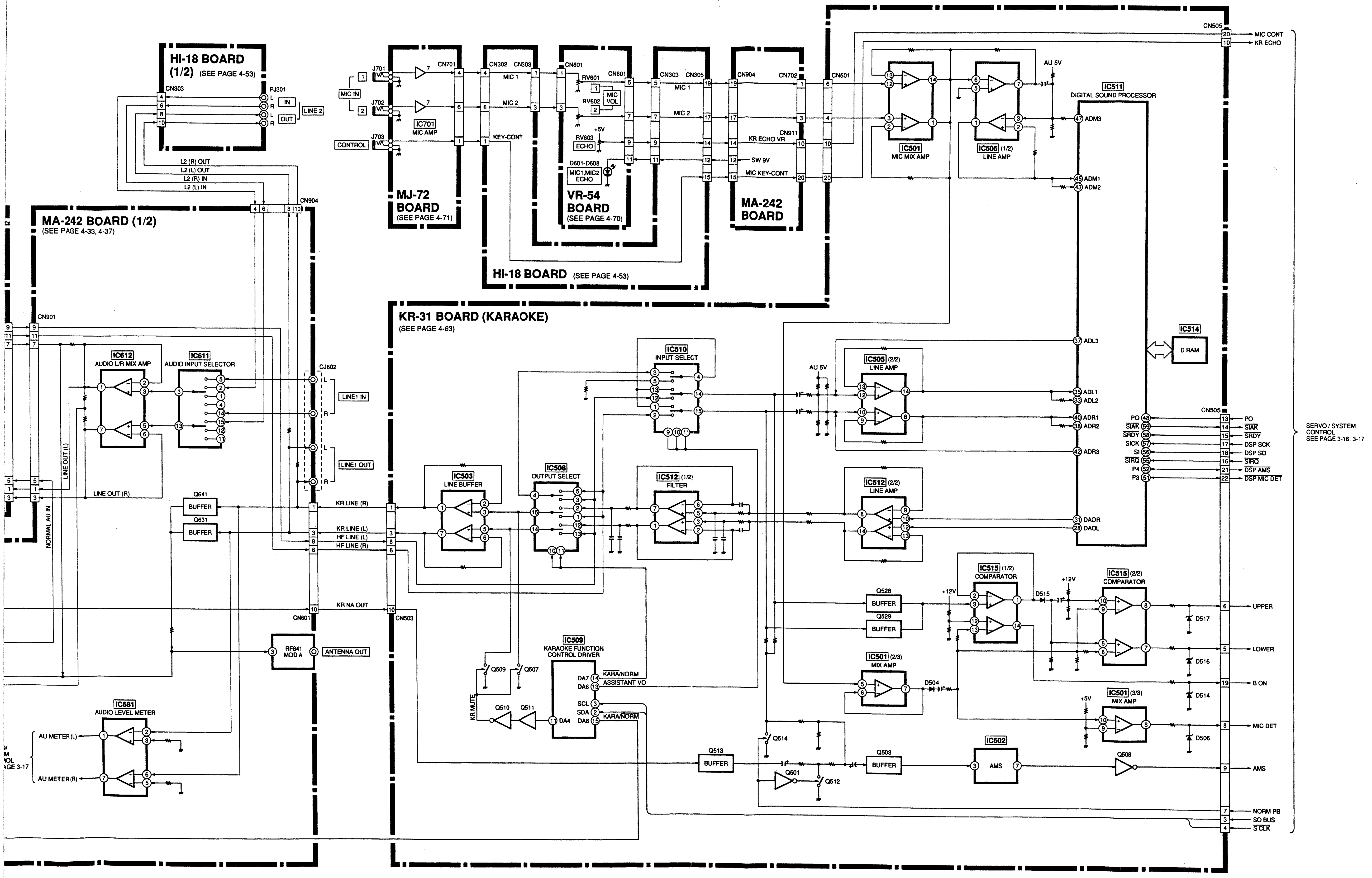

DRUM HEAD
Hi-Fi AUDIO
CH 1
CH 2
AUDIO CH1
AUDIO CH2
AUDIO REC
CN801
IC260 AFM REC/PB AMP
SW 5V
VCC
HEAD AMP
BUFFER
CURRENT AMP
PB : ON
AGC DET
AGC AMP
CONTROL LOGIC
CN803 PB RF
REC RF
CN001 AF SWP
AF REC P
REC
RV-42 BOARD
(Hi-Fi AUDIO REC/PB AMP)
(SEE PAGE 4-13)
PB RF fo & HF/N DET BPF fo
RV101
CN103 PB RF IN
REC RF OUT
IC101 AUDIO PROCESS
B.P.F
ENVE
MODEM LCH
MODEM RCH
SHWP GEN.
FM DET
EMPH DOC
PNR LCH
PNR RCH
OUTPUT SW
LINE AMP
MIX AMP
SERIAL CTRL
EVR ALC
REG
Q102
UNREG 12V
Q101
UNREG -9V
RV103 VCO fo (L) 1.3M(NTSC)
RV105 VCO fo (L) 1.4M(PAL)
RV102 VCO fo (R) 1.7M(NTSC)
RV104 VCO fo (R) 1.8M(PAL)
Q104
Q103
HF-34 BOARD
(AUDIO PROCESS)
(SEE PAGE 4-42)
CN102
LINE (L)
LINE (R)
RF CONV
NORMAL IN
Hi-Fi (L)
Hi-Fi (R)
CN101
AF ENV
AF SWP
CONT 1 (CLK)
CONT 2 (DATA)
MA-232 BOARD
(SEE PAGE 4-19, 4-23, 4-27)
CN904
CN901
TUNER SEE PAGE 3-26
TU701 ㉖ TUAU (R)
TU701 ㉗ TUAU (L)
IC612 AUDIO L/R MIX AMP
IC611 AUDIO INPUT SELECTOR
CJ602
LINE OUT (L)
LINE OUT (R)
NORMAL AU IN
Q641 BUFFER
Q631 BUFFER
REC
AF REC P
AF SWP
CN908
CN902
CLK
DATA
SOI (IC201 ㊿)
CLK (IC201 (61))
AF SWP (IC201 ⑩)
AF ENV (IC201 (61))
AF REC P (IC201 ④)
REC (IC201 (96))
SERVO/ SYSTEM CONTROL SEE PAGE 3-14
CHECK PIN
CN882
BIAS (–)
BIAS (+)
IC851 REC/PB AMP/SWITCH
CN881 PB A HEAD (Y)
ACE HEAD (NORMAL AUDIO)
AUDIO REC/PB HEAD
EQ
PB
SP
REC
MUTE
REC A HEAD (X)
TU M (TU701 ㉕) TUNER SAEE PAGE 3-26
RV887 BIAS
A MUTE (IC201 (82))
NA PB (IC201 (83))
LINE1 (IC201 (86))
LINE2 (IC201 (87))
NA SP (IC201 (81))
NA REC P (IC201 ⑰)
SERVO/ SYSTEM CONTROL SEE PAGE 3-14
AUDIO ERASE HEAD
A ERASE HEAD
BIAS ERASE OSC
T881, Q881
Q882, 889
VCC
FULL ERASE HEAD
CN891 FE HEAD
T891, Q891
Q892
FULL ERASE (IC201 (39))
RF701 MOD A
CN6
IC681 AUDIO LEVEL METER
AU METER (L)
AU METER (R)
SERVO/ SYSTEM CONTROL SEE PAGE 3-14
08


MJ-70 BOARD
(SEE PAGE 4-67)
VR-50 BOARD
(SEE PAGE 4-68)
HI-17 BOARD
(SEE PAGE 4-47)
KR-31 BOARD (KARAOKE)
(SEE PAGE 4-63)
RD
3, 4-27)
CONTROL
J903
J902
J901
MIC IN
CN901
KEY CONT
IC901
MIC AMP
MIC 2
MIC 1
CN801
CN802
RV803
ECHO
+5V
RV802
MIC 2
RV801
MIC 1
MIC 2 VR OUT
MIC 1 VR OUT
CN501
KEY CONT
ECHO VR IN
IC501
MIC MIX AMP
IC505 (1/2)
LINE AMP
AU 5V
IC511
DIGITAL SIGNAL PROCESSOR
ADM3
ADM1
ADM2
ADL3
ADL1
ADL2
ADR1
ADR2
ADR3
DAOR
DAOL
PO
SIAK
SRDY
SICK
SI
SIRQ
P4
P3
IC514
D RAM
CN505
KARAOKE ECHO
MIC CONT
KR ECHO
TIMER / TUNER / MODE CONTROL
SEE PAGE 3-20
PO
SIAK
SRDY
DSP SCK
DSP SO
SIRQ
DSP AMS
DSP MIC DET
CN904
L2 (L) IN
L2 (V) IN
CN303
PJ301
L
R
LINE IN2
TU701 ㉖ TUAU (R)
TU701 ㉗ TUAU (L)
IER
PAGE 3-26
IC612
O L/R MIX AMP
IC611
AUDIO INPUT SELECTOR
CJ602
LINE1 IN
LINE1 OUT
OUT (R)
Q641
BUFFER
Q631
BUFFER
KR LINE (R)
KR LINE (L)
HF LILNE (L)
HF LINE (R)
KR (NA) OUT
CN601
CN503
RF701
MOD A
ANTENNA OUT
IC681
O LEVEL METER
IC510
INPUT SELECT
IC505 (2/2)
LINE AMP
IC503
LINE BUFFER
IC508
OUTPUT SELECT
IC512 (1/2)
FILTER
IC512 (2/2)
LINE AMP
IC515 (1/2)
COMPARATOR
IC515 (2/2)
COMPARATOR
+12V
D515
Q528
BUFFER
Q529
BUFFER
D517
D516
D514
D506
UPPER
LOWER
B ON
MIC DET
AMS
NORM PB
SO BUS
S CLK
SERVO / SYSTEM CONTROL
SEE PAGE 3-13, 3-14
IC501 (2/3)
MIX AMP
D504
IC501 (3/3)
MIX AMP
+5V
IC509
KARAOKE FUNCTION CONTROL DRIVER
DA7
DA6
SCL
SDA
DA8
DA4
KARA/NORM
ASSISTANT VO
KARA/NORM
Q509
Q507
Q510
Q511
KR MUTE
Q513
BUFFER
Q514
Q501
Q512
Q503
BUFFER
IC502
AMS
Q508

3-7-2. SLV-KH3CH/KH3ME/KH3PS MODEL

• The boards which signals only pass through may be omitted.

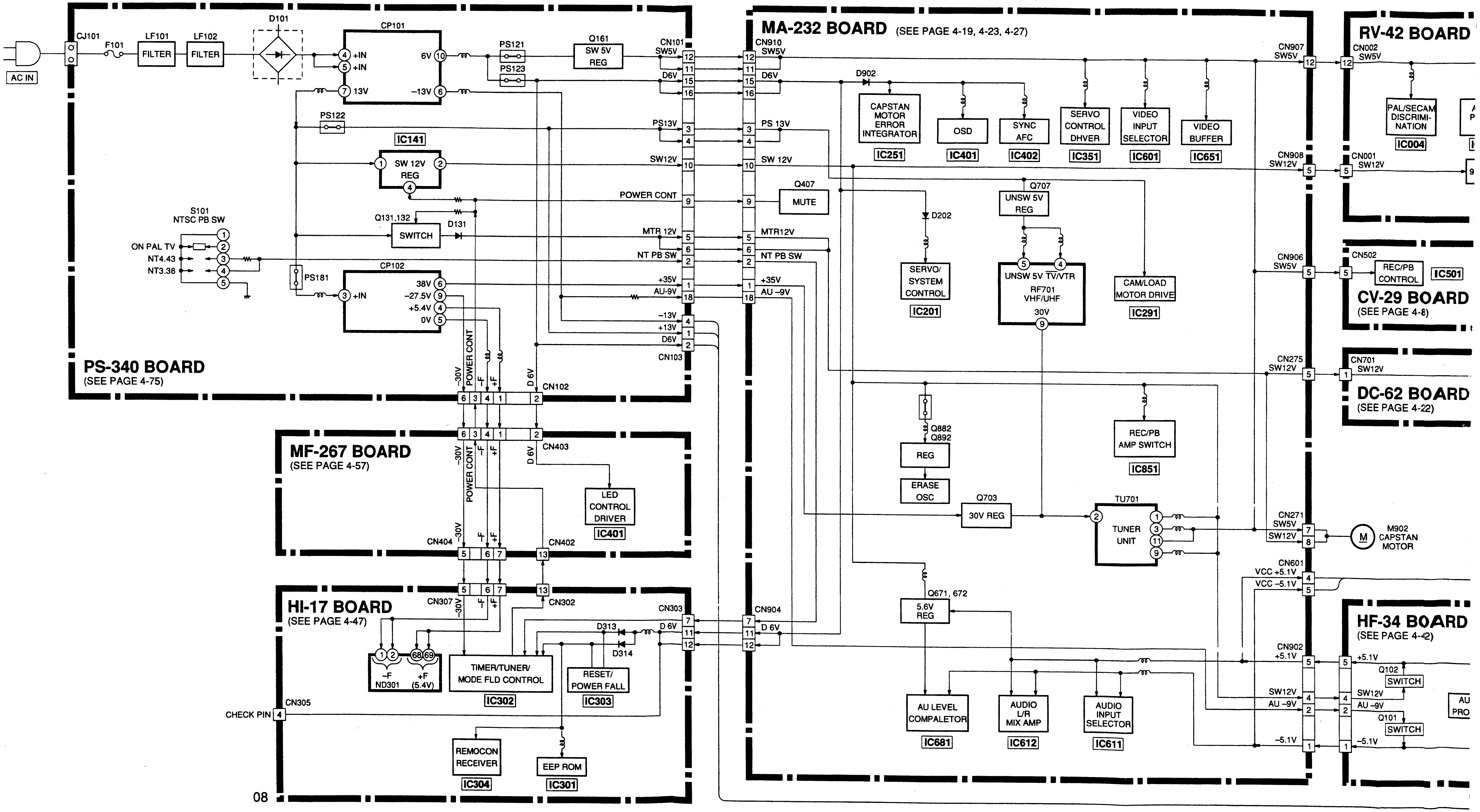

HI-18 BOARD
(1/2) (SEE PAGE 4-
CN303
L2 (R) OUT
L2 (L) OUT
L2 (R) IN
L2 (L) IN
DRUM HEAD
Hi-Fi AUDIO
CH 1
CH 2
AUDIO CH1
AUDIO CH2
AUDIO REC
CN801
IC260 AFM REC/PB AMP
SW 5V
VCC
HEAD AMP
BUFFER
CN803
PB RF
CURRENT AMP
PB : ON
AGC DET
AGC AMP
REC RF
CN001
AF SWP
AF REC P
REC
CONTROL LOGIC
RV-43 BOARD
(Hi-Fi AUDIO REC/PB AMP)
(SEE PAGE 4-13)
HF-34 BOARD
(AUDIO PROCESS)
(SEE PAGE 4-42)
PB RF fo & HF/N DET BPF fo
IC101 AUDIO PROCESS
RV101
CN103
PB RF IN
REC RF OUT
B.P.F
ENVE
MODEM LCH
MODEM RCH
SHWP GEN.
EMPH DOC
PNR LCH
PNR RCH
OUTPUT SW
FM DET
LINE AMP
MIX AMP
REG
SERIAL CTRL
EVR ALC
RV103
VCO fo (L) 1.3M(NTSC)
RV102
VCO fo (R) 1.7M(NTSC)
RV105
VCO fo (L) 1.4M(PAL)
RV104
VCO fo (R) 1.8M(PAL)
Q104
Q103
Q102
Q101
UNREG 12V
UNREG -9V
CN102
LINE (L)
LINE (R)
RF CONV
NORMAL
Hi-Fi (L)
Hi-Fi (R)
CN101
AF ENV
AF SWP
CONT 1 (CLK)
CONT 2 (DATA)
REC
AF REC P
AF SWP
MA-242 BOARD (1/2)
(SEE PAGE 4-33, 4-37)
CN901
IC612 AUDIO L/R MIX AMP
IC611 AUDIO INPUT SELECTOR
LINE OUT (L)
LINE OUT (R)
NORMAL AU IN
Q641 BUFFER
Q631 BUFFER
CN908
CN902
AF ENV
AF SWP
CLK
DATA
SOI (IC201)
CLK (IC201)
AF SWP (IC201)
AF ENV (IC201)
AF REC P (IC201④)
REC (IC201)
SERVO/ SYSTEM CONTROL SEE PAGE 3-17
CHECK PIN
CN882
BIAS (–)
BIAS (+)
CN881
PB A HEAD (Y)
ACE HEAD (NORMAL AUDIO)
AUDIO REC/PB HEAD
REC A HEAD (X)
IC851 REC/PB AMP/SWITCH
PB
EQ
SP
REC
MUTE
RV887
BIAS
AUDIO ERASE HEAD
A ERASE HEAD
BIAS ERASE OSC
T881, Q881
Q882, 889
VCC
FULL ERASE HEAD
CN891
FE HEAD
T891, Q891
Q892
A MUTE (IC201)
NA PB (IC201)
LINE1 (IC201)
LINE2 (IC201)
NA SP (IC201)
NA REC P (IC201⑰)
FULL ERASE (IC201)
SERVO/ SYSTEM CONTROL SEE PAGE 3-17
IC681 AUDIO LEVEL METER
AU METER (L)
AU METER (R)
SERVO/ SYSTEM CONTROL SEE PAGE 3-17
08

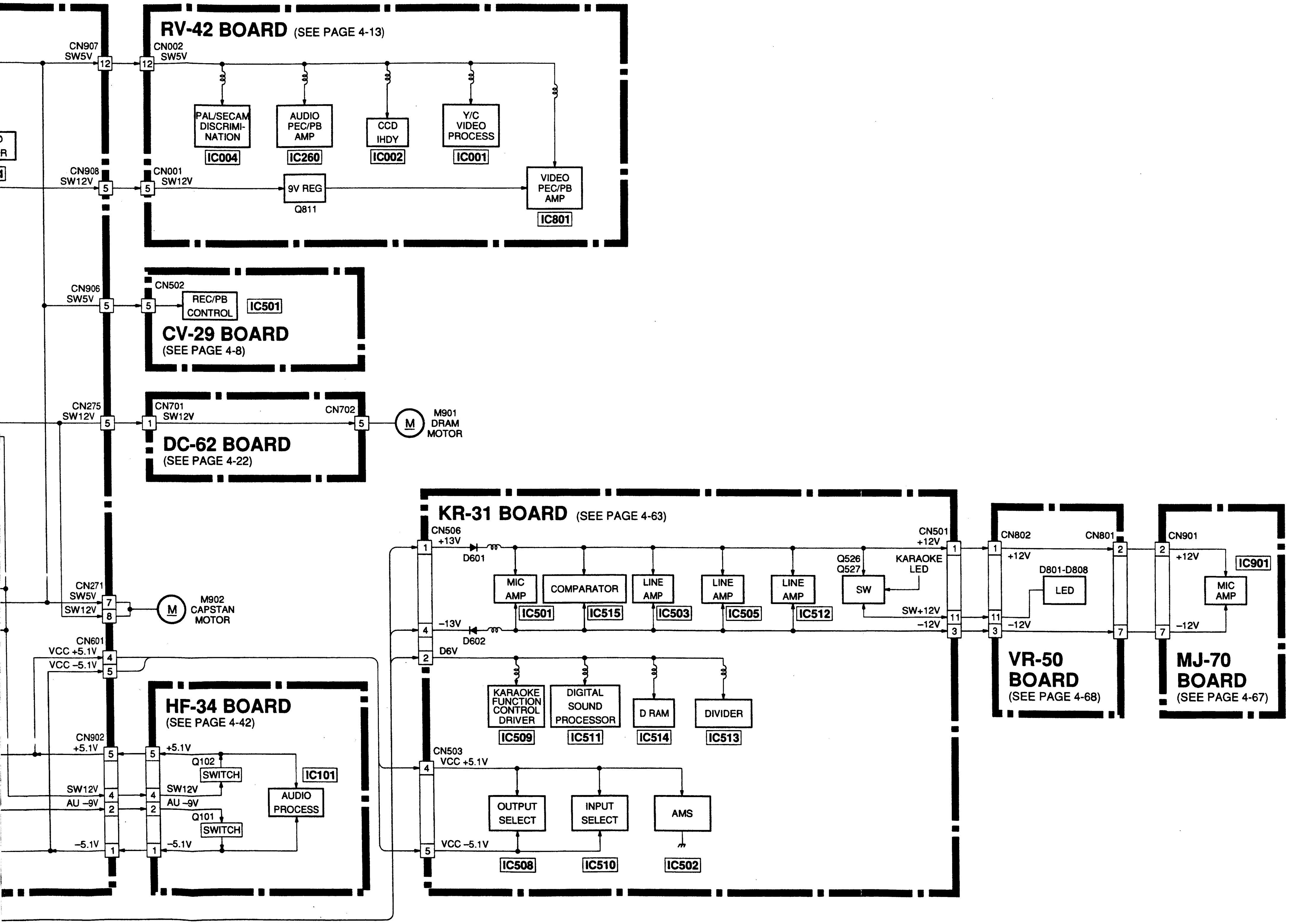

HI-18 BOARD (1/2) (SEE PAGE 4-53)
CN303
PJ301
IN
OUT
LINE 2
L2 (R) OUT
L2 (L) OUT
L2 (R) IN
L2 (L) IN
CN904
MA-242 BOARD (1/2)
(SEE PAGE 4-33, 4-37)
MIC IN
CONTROL
J701
J702
J703
IC701
MIC AMP
CN701
MJ-72 BOARD
(SEE PAGE 4-71)
CN302
CN303
MIC 1
MIC 2
KEY-CONT
CN601
RV601
RV602
MIC VOL
+5V
RV603
ECHO
D601-D608
MIC1,MIC2 ECHO
VR-54 BOARD
(SEE PAGE 4-70)
CN303
CN305
HI-18 BOARD (SEE PAGE 4-53)
CN904
CN702
KR ECHO VR
CN911
SW 9V
MIC KEY-CONT
MA-242 BOARD
CN501
IC501
MIC MIX AMP
IC505 (1/2)
LINE AMP
AU 5V
IC511
DIGITAL SOUND PROCESSOR
ADM3
ADM1
ADM2
CN505
MIC CONT
KR ECHO
KR-31 BOARD (KARAOKE)
(SEE PAGE 4-63)
ADL3
IC514
D RAM
IC510
INPUT SELECT
IC505 (2/2)
LINE AMP
ADL1
ADL2
ADR1
ADR2
ADR3
PO
SIAK
SRDY
SICK
SI
SIRQ
P4
P3
DAOR
DAOL
CN505
PO
SIAK
SRDY
DSP SCK
DSP SO
SIRQ
DSP AMS
DSP MIC DET
SERVO / SYSTEM CONTROL
SEE PAGE 3-16, 3-17
CN901
IC612
AUDIO L/R MIX AMP
IC611
AUDIO INPUT SELECTOR
CJ602
LINE1 IN
LINE1 OUT
LINE OUT (L)
LINE OUT (R)
NORMAL AU IN
Q641
BUFFER
Q631
BUFFER
KR LINE (R)
KR LINE (L)
HF LINE (L)
HF LINE (R)
IC503
LINE BUFFER
IC508
OUTPUT SELECT
IC512 (1/2)
FILTER
IC512 (2/2)
LINE AMP
KR NA OUT
CN601
CN503
RF841
MOD A
ANTENNA OUT
IC509
KARAOKE FUNCTION CONTROL DRIVER
Q509
Q507
KR MUTE
Q510
Q511
DA7
DA6
SCL
SDA
DA8
DA4
KARA/NORM
ASSISTANT VO
KARA/NORM
IC515 (1/2)
COMPARATOR
IC515 (2/2)
COMPARATOR
+12V
D515
Q528
BUFFER
Q529
BUFFER
D517
UPPER
D516
LOWER
IC501 (2/3)
MIX AMP
D504
B ON
IC501 (3/3)
MIX AMP
D514
MIC DET
D506
Q514
Q513
BUFFER
Q501
Q512
Q503
BUFFER
IC502
AMS
Q508
AMS
NORM PB
SO BUS
S CLK
IC681
AUDIO LEVEL METER
AU METER (L)
AU METER (R)
AGE 3-17

3-8. POWER BLOCK DIAGRAMS

3-8-1. SLV-K862CH/K862PS/K872MN/K872PS MODEL

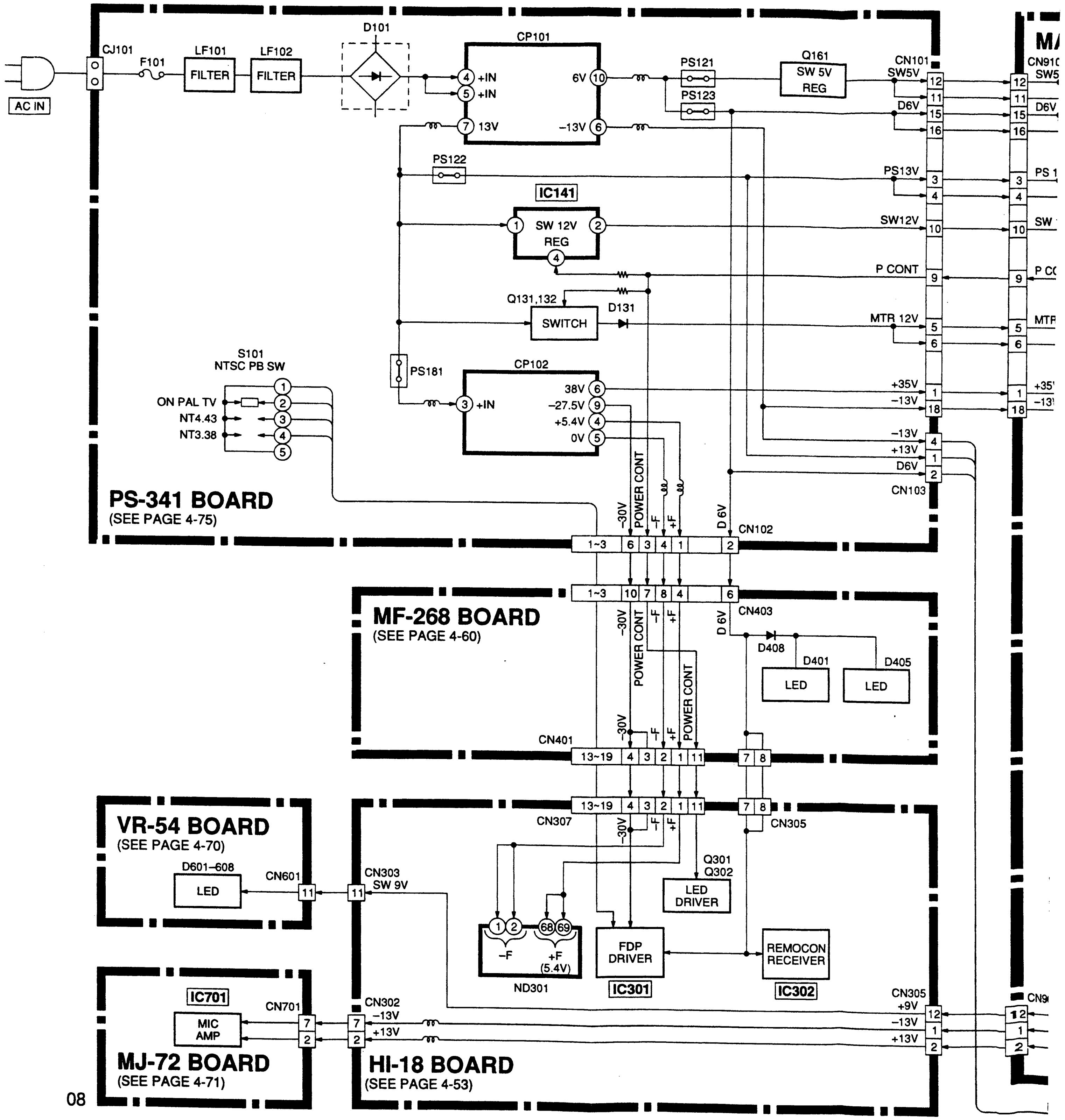
- **The boards which signals only pass through may be omitted.**


AC IN
CJ101
F101
LF101
FILTER
LF102
FILTER
D101
CP101
+IN
+IN
13V
6V
-13V
PS121
PS123
Q161
SW 5V REG
PS122
IC141
SW 12V REG
Q131,132
SWITCH
D131
S101 NTSC PB SW
ON PAL TV
NT4.43
NT3.38
PS181
CP102
+IN
38V
-27.5V
+5.4V
0V
CN101
SW5V
D6V
PS13V
SW12V
POWER CONT
MTR 12V
NT PB SW
+35V
AU-9V
-13V
+13V
D6V
CN103
PS-340 BOARD
(SEE PAGE 4-75)
-30V
POWER CONT
-F
+F
D 6V
CN102
MF-267 BOARD
(SEE PAGE 4-57)
CN403
LED CONTROL DRIVER
IC401
CN404
CN402
HI-17 BOARD
(SEE PAGE 4-47)
CN307
CN302
CN303
D313
D314
D 6V
ND301
-F
+F
(5.4V)
TIMER/TUNER/ MODE FLD CONTROL
IC302
RESET/ POWER FALL
IC303
CN305
CHECK PIN
REMOCON RECEIVER
IC304
EEP ROM
IC301
08
MA-232 BOARD (SEE PAGE 4-19, 4-23, 4-27)
CN910
SW5V
D6V
PS 13V
SW 12V
Q407
MUTE
MTR12V
NT PB SW
+35V
AU -9V
D902
CAPSTAN MOTOR ERROR INTEGRATOR
IC251
OSD
IC401
SYNC AFC
IC402
SERVO CONTROL DHVER
IC351
VIDEO INPUT SELECTOR
IC601
VIDEO BUFFER
IC651
Q707
UNSW 5V REG
D202
SERVO/ SYSTEM CONTROL
IC201
UNSW 5V TV/VTR
RF701
VHF/UHF
30V
CAM/LOAD MOTOR DRIVE
IC291
Q882
Q892
REG
ERASE OSC
REC/PB AMP SWITCH
IC851
Q703
30V REG
TU701
TUNER UNIT
Q671, 672
5.6V REG
CN904
D 6V
AU LEVEL COMPALETOR
IC681
AUDIO L/R MIX AMP
IC612
AUDIO INPUT SELECTOR
IC611
CN907
SW5V
CN908
SW12V
CN906
SW5V
CN275
SW12V
CN271
SW5V
SW12V
CN601
VCC +5.1V
VCC -5.1V
CN902
+5.1V
SW12V
AU -9V
-5.1V
M
M902 CAPSTAN MOTOR
RV-42 BOARD
CN002
SW5V
PAL/SECAM DISCRIMI- NATION
IC004
CN001
SW12V
CN502
REC/PB CONTROL
IC501
CV-29 BOARD
(SEE PAGE 4-8)
CN701
SW12V
DC-62 BOARD
(SEE PAGE 4-22)
HF-34 BOARD
(SEE PAGE 4-42)
+5.1V
Q102
SWITCH
SW12V
AU -9V
Q101
SWITCH
-5.1V

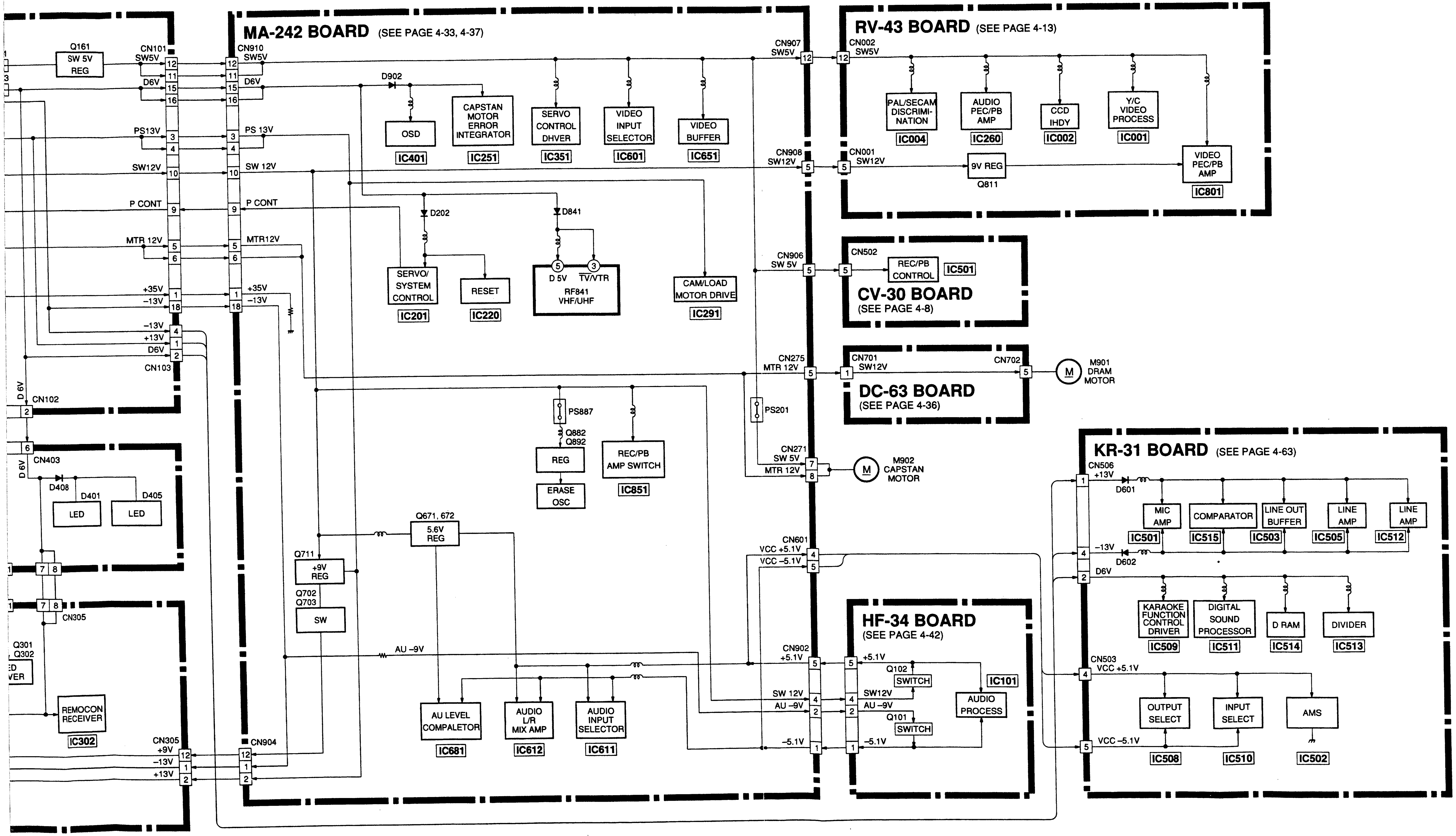

RV-42 BOARD (SEE PAGE 4-13)
CN907
SW5V
12
CN002
SW5V
PAL/SECAM DISCRIMI-NATION
IC004
AUDIO PEC/PB AMP
IC260
CCD IHDY
IC002
Y/C VIDEO PROCESS
IC001
CN908
SW12V
5
CN001
SW12V
9V REG
Q811
VIDEO PEC/PB AMP
IC801
CN906
SW5V
5
CN502
REC/PB CONTROL
IC501
CV-29 BOARD
(SEE PAGE 4-8)
CN275
SW12V
5
CN701
SW12V
1
CN702
5
M
M901 DRAM MOTOR
DC-62 BOARD
(SEE PAGE 4-22)
CN271
SW5V
SW12V
7
8
M
M902 CAPSTAN MOTOR
CN601
VCC +5.1V
VCC −5.1V
4
5
HF-34 BOARD
(SEE PAGE 4-42)
CN902
+5.1V
SW12V
AU −9V
−5.1V
5
4
2
1
+5.1V
Q102
SWITCH
SW12V
AU −9V
Q101
SWITCH
−5.1V
IC101
AUDIO PROCESS
KR-31 BOARD (SEE PAGE 4-63)
CN506
+13V
D601
1
MIC AMP
IC501
COMPARATOR
IC515
LINE AMP
IC503
LINE AMP
IC505
LINE AMP
IC512
Q526
Q527
SW
KARAOKE LED
CN501
+12V
SW+12V
−12V
1
11
3
4
−13V
D602
2
D6V
KARAOKE FUNCTION CONTROL DRIVER
IC509
DIGITAL SOUND PROCESSOR
IC511
D RAM
IC514
DIVIDER
IC513
CN503
VCC +5.1V
4
OUTPUT SELECT
IC508
INPUT SELECT
IC510
AMS
IC502
5
VCC −5.1V
CN802
+12V
1
11
3
−12V
D801-D808
LED
CN801
2
7
VR-50 BOARD
(SEE PAGE 4-68)
CN901
2
+12V
7
−12V
IC901
MIC AMP
MJ-70 BOARD
(SEE PAGE 4-67)

3-8-2. SLV-KH3CH/KH3ME/KH3PS MODEL

- **The boards which signals only pass through may be omitted.**

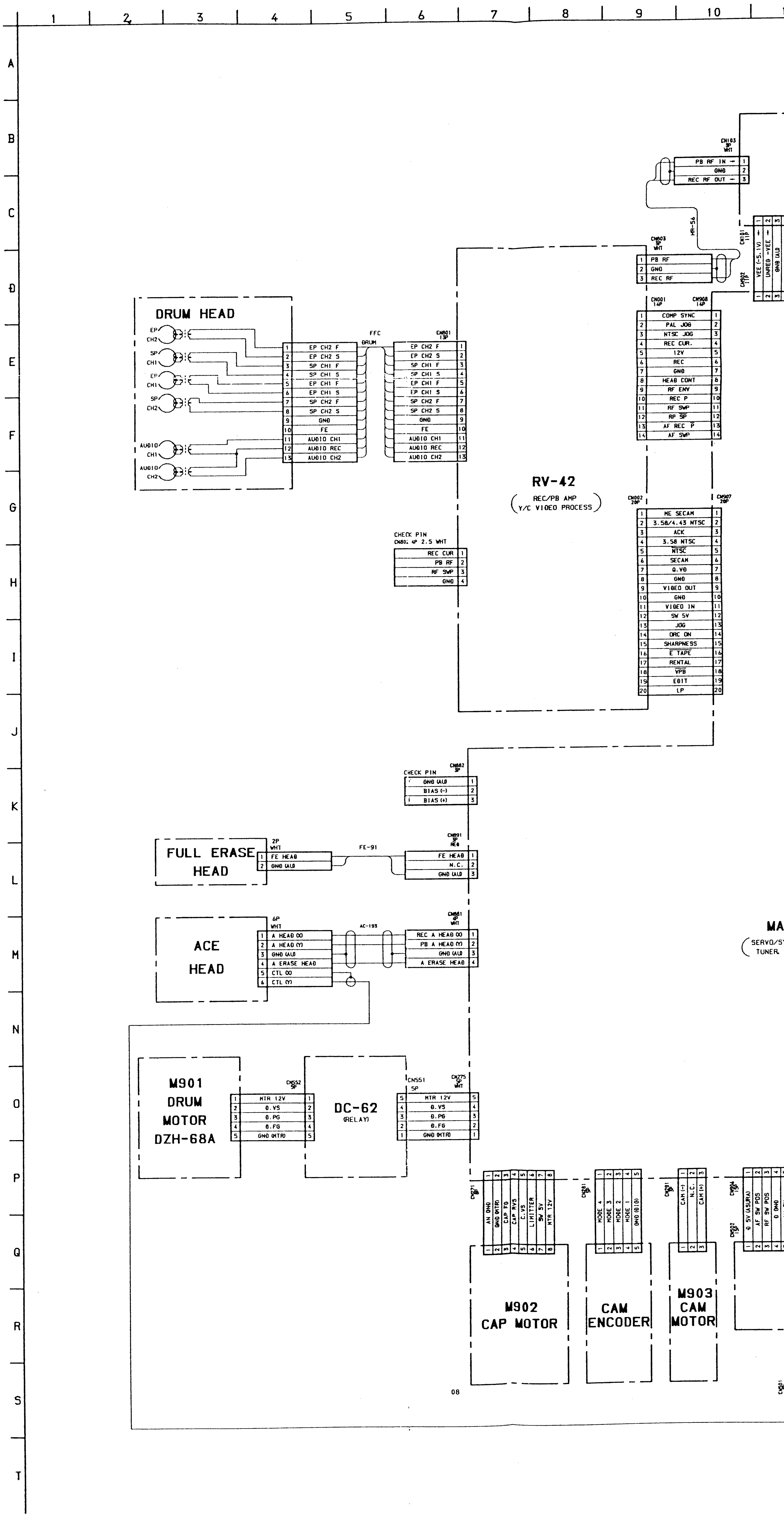

AC IN
CJ101
F101
LF101
FILTER
LF102
FILTER
D101
CP101
+IN
+IN
13V
6V
-13V
PS121
PS123
Q161
SW 5V
REG
CN101
SW5V
D6V
PS122
IC141
SW 12V
REG
PS13V
SW12V
P CONT
Q131,132
SWITCH
D131
MTR 12V
S101
NTSC PB SW
ON PAL TV
NT4.43
NT3.38
PS181
CP102
+IN
38V
-27.5V
+5.4V
0V
+35V
-13V
-13V
+13V
D6V
CN103
PS-341 BOARD
(SEE PAGE 4-75)
-30V
POWER CONT
-F
+F
D 6V
CN102
1~3
MF-268 BOARD
(SEE PAGE 4-60)
CN403
D408
D401
D405
LED
LED
CN401
13~19
CN307
CN305
VR-54 BOARD
(SEE PAGE 4-70)
D601–608
LED
CN601
CN303
SW 9V
Q301
Q302
LED
DRIVER
ND301
-F
+F
(5.4V)
FDP
DRIVER
IC301
REMOCON
RECEIVER
IC302
MJ-72 BOARD
(SEE PAGE 4-71)
IC701
MIC
AMP
CN701
CN302
-13V
+13V
HI-18 BOARD
(SEE PAGE 4-53)
CN305
+9V
-13V
+13V
MA
CN910
SW5
D6V
PS 1
SW
P CO
MTR
+35
-13
CN9

08


MA-242 BOARD (SEE PAGE 4-33, 4-37)
RV-43 BOARD (SEE PAGE 4-13)
CV-30 BOARD (SEE PAGE 4-8)
DC-63 BOARD (SEE PAGE 4-36)
KR-31 BOARD (SEE PAGE 4-63)
HF-34 BOARD (SEE PAGE 4-42)
Q161 SW 5V REG
CN101 SW5V D6V
PS13V SW12V P CONT MTR 12V +35V −13V
−13V +13V D6V CN103
CN102 CN403 D408 D401 D405 LED LED
CN305 Q301 Q302 REMOCON RECEIVER IC302
CN305 +9V −13V +13V
CN910 SW5V D6V PS 13V SW 12V P CONT MTR12V +35V −13V
D902 OSD IC401
CAPSTAN MOTOR ERROR INTEGRATOR IC251
SERVO CONTROL DHVER IC351
VIDEO INPUT SELECTOR IC601
VIDEO BUFFER IC651
D202 D841
SERVO/ SYSTEM CONTROL IC201
RESET IC220
D 5V TV/VTR RF841 VHF/UHF
CAM/LOAD MOTOR DRIVE IC291
PS887 Q882 Q892 REG ERASE OSC
REC/PB AMP SWITCH IC851
PS201
Q671, 672 5.6V REG
Q711 +9V REG Q702 Q703 SW
AU −9V
AU LEVEL COMPALETOR IC681
AUDIO L/R MIX AMP IC612
AUDIO INPUT SELECTOR IC611
CN904
CN907 SW5V
CN908 SW12V
CN906 SW 5V
CN275 MTR 12V
CN271 SW 5V MTR 12V
M M902 CAPSTAN MOTOR
CN601 VCC +5.1V VCC −5.1V
CN902 +5.1V SW 12V AU −9V −5.1V
CN002 SW5V
PAL/SECAM DISCRIMI- NATION IC004
AUDIO PEC/PB AMP IC260
CCD IHDY IC002
Y/C VIDEO PROCESS IC001
VIDEO PEC/PB AMP IC801
CN001 SW12V 9V REG Q811
CN502 REC/PB CONTROL IC501
CN701 SW12V CN702
M M901 DRAM MOTOR
+5.1V Q102 SWITCH IC101 SW12V AU −9V Q101 SWITCH AUDIO PROCESS −5.1V
CN506 +13V D601
MIC AMP IC501
COMPARATOR IC515
LINE OUT BUFFER IC503
LINE AMP IC505
LINE AMP IC512
−13V D602 D6V
KARAOKE FUNCTION CONTROL DRIVER IC509
DIGITAL SOUND PROCESSOR IC511
D RAM IC514
DIVIDER IC513
CN503 VCC +5.1V
OUTPUT SELECT IC508
INPUT SELECT IC510
AMS IC502
VCC −5.1V

4-1. FRAME SCHEMATIC DIAGRAMS

4-1-1. SLV-K862CH/K862PS/K872MN/K872PS MODEL


1
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3
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5
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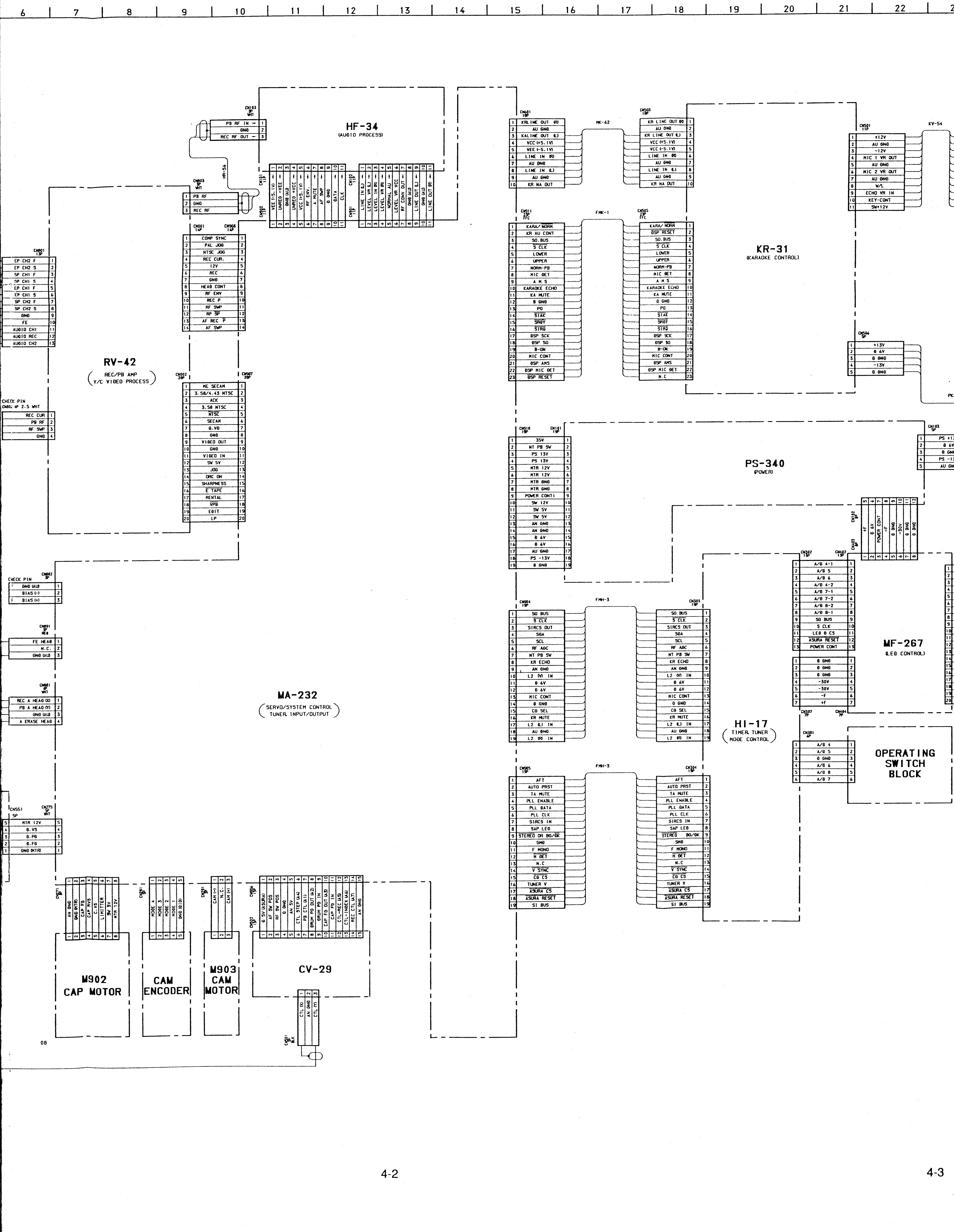
7
8
9
10
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
DRUM HEAD
EP CH2
SP CH1
EP CH1
SP CH2
AUDIO CH1
AUDIO CH2
FFC
DRUM
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
CHECK PIN
CN802 4P 2.5 WHT
REC CUR
PB RF
RF SWP
GND
RV-42
REC/PB AMP
Y/C VIDEO PROCESS
CN103 3P WHT
PB RF IN
GND
REC RF OUT
MR-56
CN803 3P WHT
PB RF
GND
REC RF
CN101 11P
CN902 11P
VEE (-5.1V)
UNREG -VEE
GND (AU)
CN001 14P
CN908 14P
COMP SYNC
PAL JOG
NTSC JOG
REC CUR.
12V
REC
GND
HEAD CONT
RF ENV
REC P
RF SWP
RP SP
AF REC P
AF SWP
CN002 20P
CN907 20P
ME SECAM
3.58/4.43 NTSC
ACK
3.58 NTSC
NTSC
SECAM
Q.VD
GND
VIDEO OUT
GND
VIDEO IN
SW 5V
JOG
DRC ON
SHARPNESS
E TAPE
RENTAL
VPB
EDIT
LP
CHECK PIN
CN882 3P
GND (AU)
BIAS (-)
BIAS (+)
FULL ERASE HEAD
2P WHT
FE HEAD
GND (AU)
FE-91
CN891 3P RED
FE HEAD
N.C.
GND (AU)
ACE HEAD
6P WHT
A HEAD (X)
A HEAD (Y)
GND (AU)
A ERASE HEAD
CTL (X)
CTL (Y)
AC-193
CN881 4P WHT
REC A HEAD (X)
PB A HEAD (Y)
GND (AU)
A ERASE HEAD
MA
SERVO/S
TUNER
M901
DRUM
MOTOR
DZH-68A
CN552 5P
MTR 12V
D.VS
D.PG
D.FG
GND (MTR)
DC-62
(RELAY)
CN551 5P
CN275 5P WHT
MTR 12V
D.VS
D.PG
D.FG
GND (MTR)
CN271 8P
AN GND
GND (MTR)
CAP FG
CAP RVS
C.VS
LIMITTER
SW 5V
MTR 12V
CN281 5P
MODE 4
MODE 3
MODE 2
MODE 1
GND (DIG)
CN291 3P
CAM (-)
N.C.
CAM (+)
CN904 15P
CN502 15P
D 5V (ASURA)
AF SW POS
RF SW POS
D GND
M902
CAP MOTOR
CAM
ENCODER
M903
CAM
MOTOR
08
CN501

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

MS

K872PS MODEL


6
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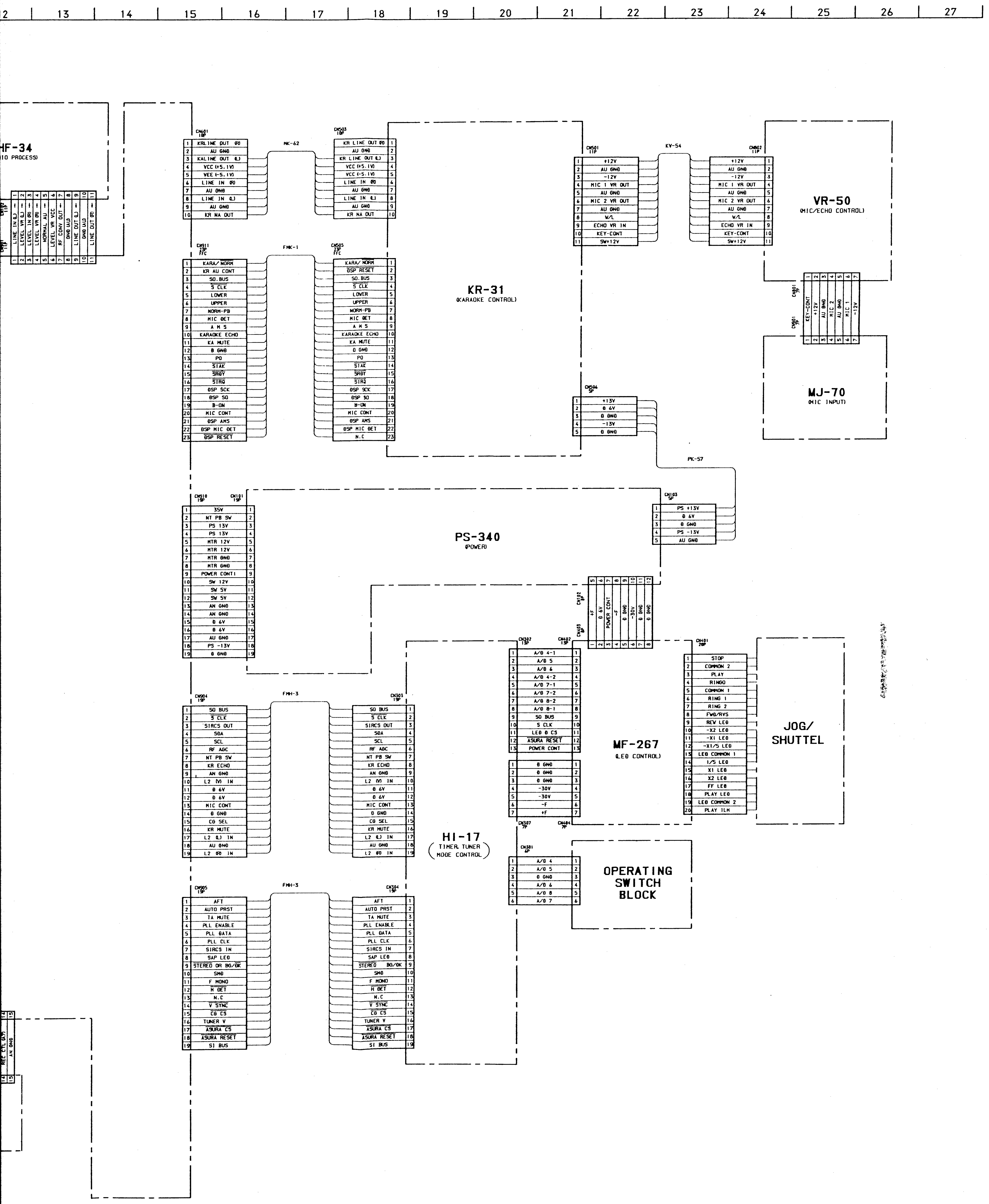
11
12
13
14
15
16
17
18
19
20
21
22
HF-34
(AUDIO PROCESS)
RV-42
REC/PB AMP
Y/C VIDEO PROCESS
MA-232
SERVO/SYSTEM CONTROL
TUNER INPUT/OUTPUT
KR-31
(KARAOKE CONTROL)
PS-340
(POWER)
HI-17
TIMER, TUNER
MODE CONTROL
MF-267
(LED CONTROL)
OPERATING
SWITCH
BLOCK
CV-29
M902
CAP MOTOR
CAM
ENCODER
M903
CAM
MOTOR
MK-62
FMK-1
FMH-3
FMH-3
KY-54
CHECK PIN
08

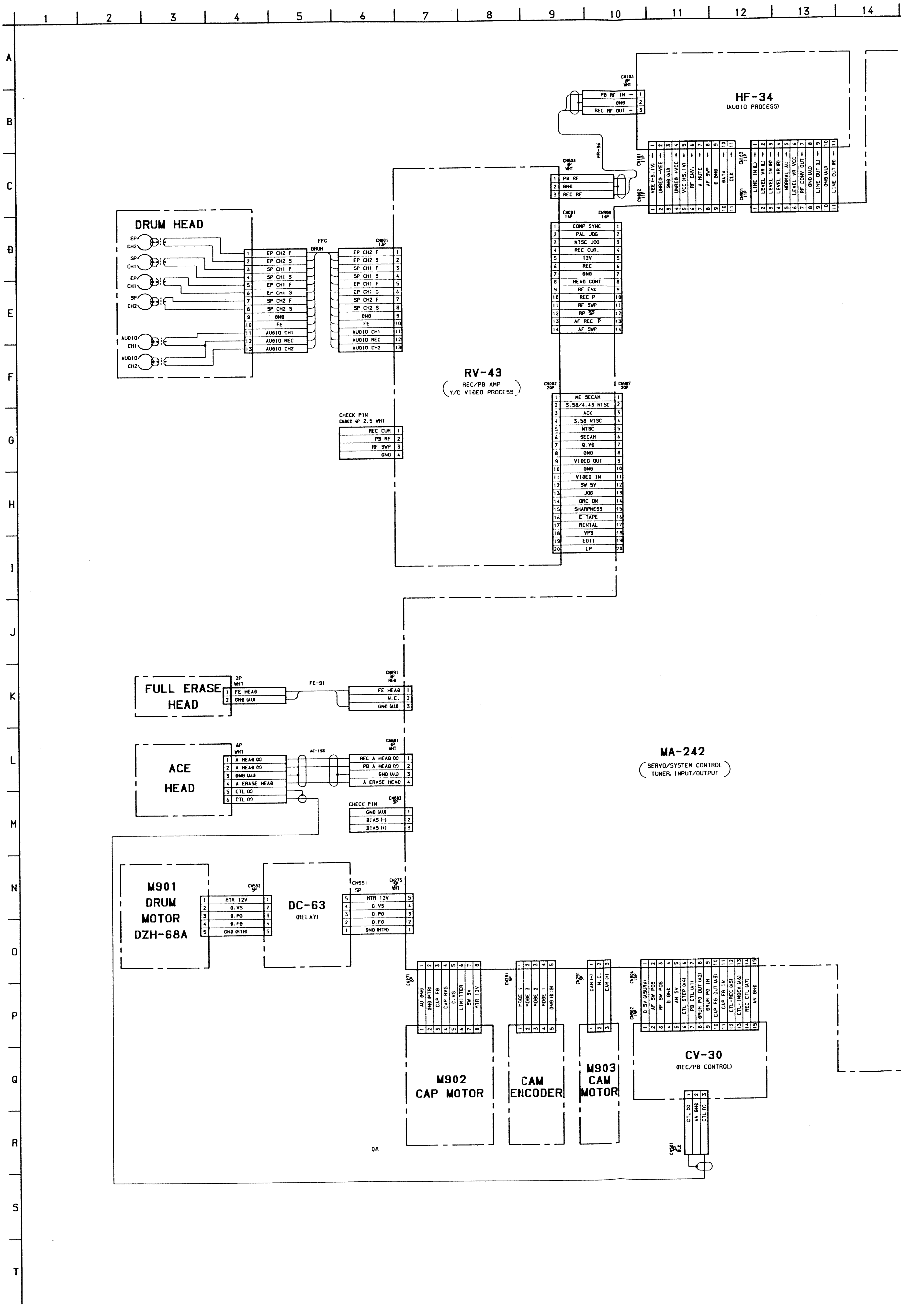
ION 4

AND SCHEMATIC DIAGRAMS


2
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
HF-34
IO PROCESS)
CN101 11P
CN502 11P
1 LINE IN (L)
2 LEVEL VR (L)
3 LEVEL IN (R)
4 LEVEL VR (R)
5 NORMAL AU
6 LEVEL VR VCC
7 RF CONV OUT
8 GND (AU)
9 LINE OUT (L)
10 GND (AU)
11 LINE OUT (R)
14 REC CTL (A/V)
15 AN GND
CN601 10P
MK-62
CN503 10P
1 KRLINE OUT (R)
2 AU GND
3 KALINE OUT (L)
4 VCC (+5.1V)
5 VEE (-5.1V)
6 LINE IN (R)
7 AU GND
8 LINE IN (L)
9 AU GND
10 KR NA OUT
1 KR LINE OUT (R)
2 AU GND
3 KR LINE OUT (L)
4 VCC (+5.1V)
5 VCC (-5.1V)
6 LINE IN (R)
7 AU GND
8 LINE IN (L)
9 AU GND
10 KR NA OUT
CN911 23P FFC
FMK-1
CN505 23P FFC
1 KARA/NORM
2 KR AU CONT
3 SO.BUS
4 S CLK
5 LOWER
6 UPPER
7 NORM-PB
8 MIC DET
9 A M S
10 KARAOKE ECHO
11 KA MUTE
12 D GND
13 PO
14 SIAK
15 SRDY
16 SIRQ
17 DSP SCK
18 DSP SO
19 B-ON
20 MIC CONT
21 DSP AMS
22 DSP MIC DET
23 DSP RESET
1 KARA/NORM
2 DSP RESET
3 SO.BUS
4 S CLK
5 LOWER
6 UPPER
7 NORM-PB
8 MIC DET
9 A M S
10 KARAOKE ECHO
11 KA MUTE
12 D GND
13 PO
14 SIAK
15 SRDY
16 SIRQ
17 DSP SCK
18 DSP SO
19 B-ON
20 MIC CONT
21 DSP AMS
22 DSP MIC DET
23 N.C
KR-31
(KARAOKE CONTROL)
CN501 11P
KV-54
CN802 11P
1 +12V
2 AU GND
3 -12V
4 MIC 1 VR OUT
5 AU GND
6 MIC 2 VR OUT
7 AU GND
8 W/L
9 ECHO VR IN
10 KEY-CONT
11 SW+12V
VR-50
(MIC/ECHO CONTROL)
CN801 7P
CN901 7P
1 KEY-CONT
2 +12V
3 AU GND
4 MIC 2
5 AU GND
6 MIC 1
7 -12V
MJ-70
(MIC INPUT)
CN504 5P
1 +13V
2 D 6V
3 D GND
4 -13V
5 D GND
PK-57
CN910 19P
CN101 19P
1 35V
2 NT PB SW
3 PS 13V
4 PS 13V
5 MTR 12V
6 MTR 12V
7 MTR GND
8 MTR GND
9 POWER CONT1
10 SW 12V
11 SW 5V
12 SW 5V
13 AN GND
14 AN GND
15 D 6V
16 D 6V
17 AU GND
18 PS -13V
19 D GND
PS-340
(POWER)
CN103 5P
1 PS +13V
2 D 6V
3 D GND
4 PS -13V
5 AU GND
CN102 8P
CN403 8P
+F
D 6V
POWER CONT
-F
D GND
-30V
D GND
D GND
CN904 19P
FMH-3
CN303 19P
1 SO BUS
2 S CLK
3 SIRCS OUT
4 SDA
5 SCL
6 RF AGC
7 NT PB SW
8 KR ECHO
9 AN GND
10 L2 (V) IN
11 D 6V
12 D 6V
13 MIC CONT
14 D GND
15 CG SEL
16 KR MUTE
17 L2 (L) IN
18 AU GND
19 L2 (R) IN
CN905 19P
FMH-3
CN304 19P
1 AFT
2 AUTO PRST
3 TA MUTE
4 PLL ENABLE
5 PLL DATA
6 PLL CLK
7 SIRCS IN
8 SAP LED
9 STEREO OR BG/DK
10 SMD
11 F MONO
12 H DET
13 N.C
14 V SYNC
15 CG CS
16 TUNER V
17 ASURA CS
18 ASURA RESET
19 SI BUS
9 STEREO BG/DK
HI-17
(TIMER, TUNER MODE CONTROL)
CN302 13P
CN402 13P
1 A/D 4-1
2 A/D 5
3 A/D 6
4 A/D 4-2
5 A/D 7-1
6 A/D 7-2
7 A/D 8-2
8 A/D 8-1
9 SO BUS
10 S CLK
11 LED D CS
12 ASURA RESET
13 POWER CONT
1 D GND
2 D GND
3 D GND
4 -30V
5 -30V
6 -F
7 +F
CN307 7P
CN404 7P
MF-267
(LED CONTROL)
CN401 20P
1 STOP
2 COMMON 2
3 PLAY
4 RINGO
5 COMMON 1
6 RING 1
7 RING 2
8 FWD/RVS
9 REW LED
10 -X2 LED
11 -X1 LED
12 -X1/5 LED
13 LED COMMON 1
14 1/5 LED
15 X1 LED
16 X2 LED
17 FF LED
18 PLAY LED
19 LED COMMON 2
20 PLAY ILM
JOG/
SHUTTEL
CN301 6P
1 A/D 4
2 A/D 5
3 D GND
4 A/D 6
5 A/D 8
6 A/D 7
OPERATING
SWITCH
BLOCK

FRAME

4-1-2. SLV-KH3CH/KH3ME/KH3PS MODEL


HF-34
(AUDIO PROCESS)
CN103 3P WHT
PB RF IN
GND
REC RF OUT
HR-56
CN803 3P WHT
PB RF
GND
REC RF
CN101 11P
CN902 11P
VEE (-5.1V)
UNREG -VEE
GND (AU)
UNREG +VCC
VCC (+5.1V)
RF ENV.
A MUTE
AF SWP
D GND
DATA
CLK
CN102 11P
CN901 11P
LINE IN (L)
LEVEL VR (L)
LEVEL IN (R)
LEVEL VR (R)
NORMAL AU
LEVEL VR VCC
RF CONV OUT
GND (AU)
LINE OUT (L)
GND (AU)
LINE OUT (R)
CN001 14P
CN908 14P
COMP SYNC
PAL JOG
NTSC JOG
REC CUR.
12V
REC
GND
HEAD CONT
RF ENV
REC P
RF SWP
RP SP
AF REC P
AF SWP
DRUM HEAD
EP CH2
SP CH1
EP CH1
SP CH2
AUDIO CH1
AUDIO CH2
FFC DRUM
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
RV-43
(REC/PB AMP Y/C VIDEO PROCESS)
CHECK PIN CN802 4P 2.5 WHT
REC CUR
PB RF
RF SWP
GND
CN002 20P
CN907 20P
ME SECAM
3.58/4.43 NTSC
ACK
3.58 NTSC
NTSC
SECAM
Q.VQ
GND
VIDEO OUT
GND
VIDEO IN
SW 5V
JOG
DRC ON
SHARPNESS
E TAPE
RENTAL
VPB
EDIT
LP
FULL ERASE HEAD
2P WHT
FE HEAD
GND (AU)
FE-91
CN891 3P RED
FE HEAD
N.C.
GND (AU)
ACE HEAD
6P WHT
A HEAD (X)
A HEAD (Y)
GND (AU)
A ERASE HEAD
CTL (X)
CTL (Y)
AC-193
CN881 4P WHT
REC A HEAD (X)
PB A HEAD (Y)
GND (AU)
A ERASE HEAD
CHECK PIN CN882 3P
GND (AU)
BIAS (-)
BIAS (+)
MA-242
(SERVO/SYSTEM CONTROL TUNER INPUT/OUTPUT)
M901 DRUM MOTOR DZH-68A
CN552 5P
MTR 12V
D.VS
D.PG
D.FG
GND (MTR)
DC-63
(RELAY)
CN551 5P
CN275 5P WHT
MTR 12V
D.VS
D.PG
D.FG
GND (MTR)
CN271 8P
AU GND
GND (MTR)
CAP FG
CAP RVS
C.VS
LIMITTER
SW 5V
MTR 12V
CN281 5P
MODE 4
MODE 3
MODE 2
MODE 1
GND (DIG)
CN291 3P
CAM (-)
N.C.
CAM (+)
CN906 15P
CN502 15P
D 5V (ASURA)
AF SW POS
RF SW POS
D GND
AN 5V
CTL STEP (A4)
PB CTL (A1)
DRUM PG OUT (A2)
DRUM PG IN
CAP FG OUT (A3)
CAP FG IN
CTL-REC (A5)
CTL-INDEX (A6)
REC CTL (A7)
AN GND
M902 CAP MOTOR
CAM ENCODER
M903 CAM MOTOR
CV-30
(REC/PB CONTROL)
CN501 3P BLK
CTL (X)
AN GND
CTL (Y)
08
1
2
3
4
5
6
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10
11
12
13
14
A
B
C
D
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H
I
J
K
L
M
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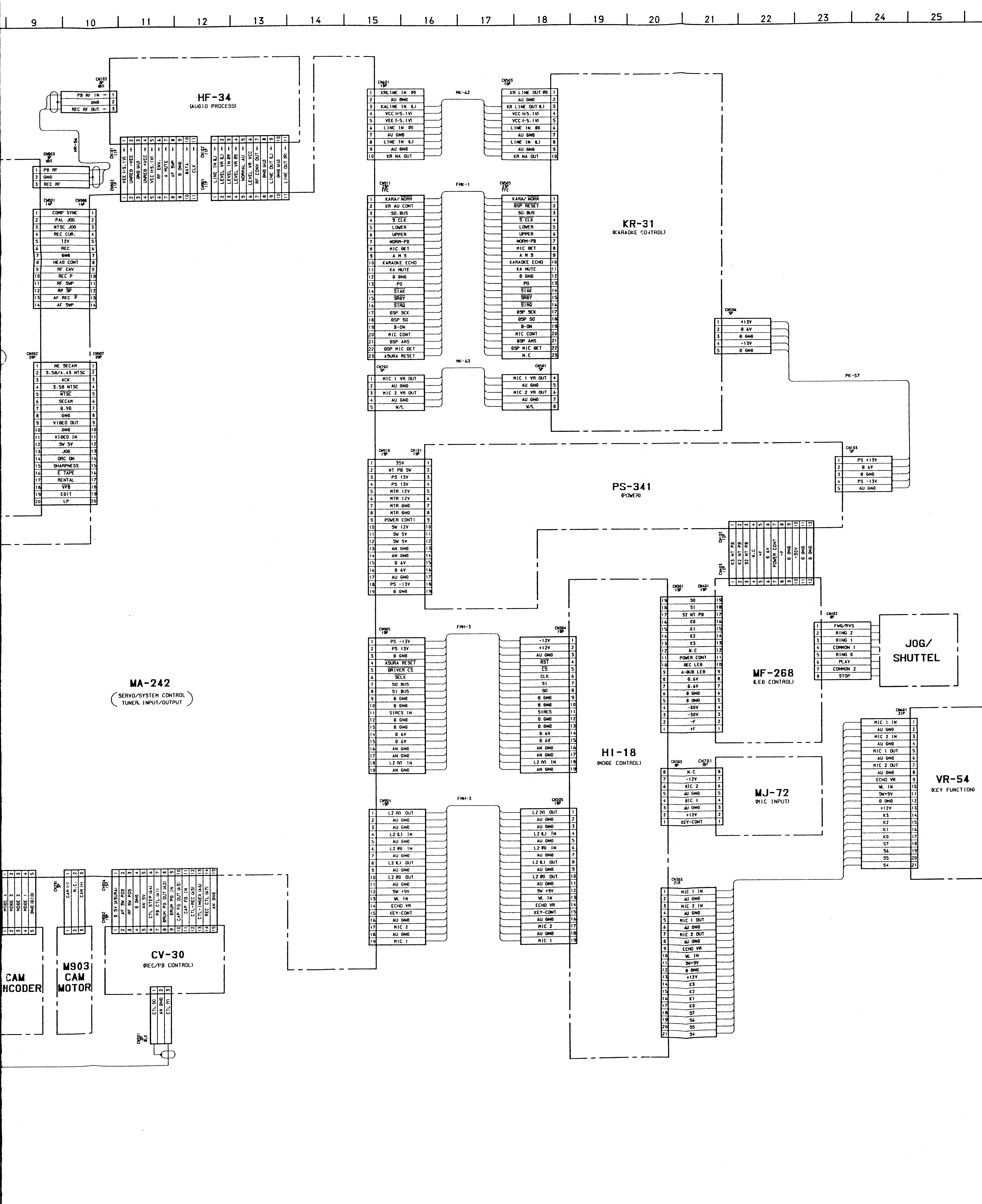
O
P
Q
R
S
T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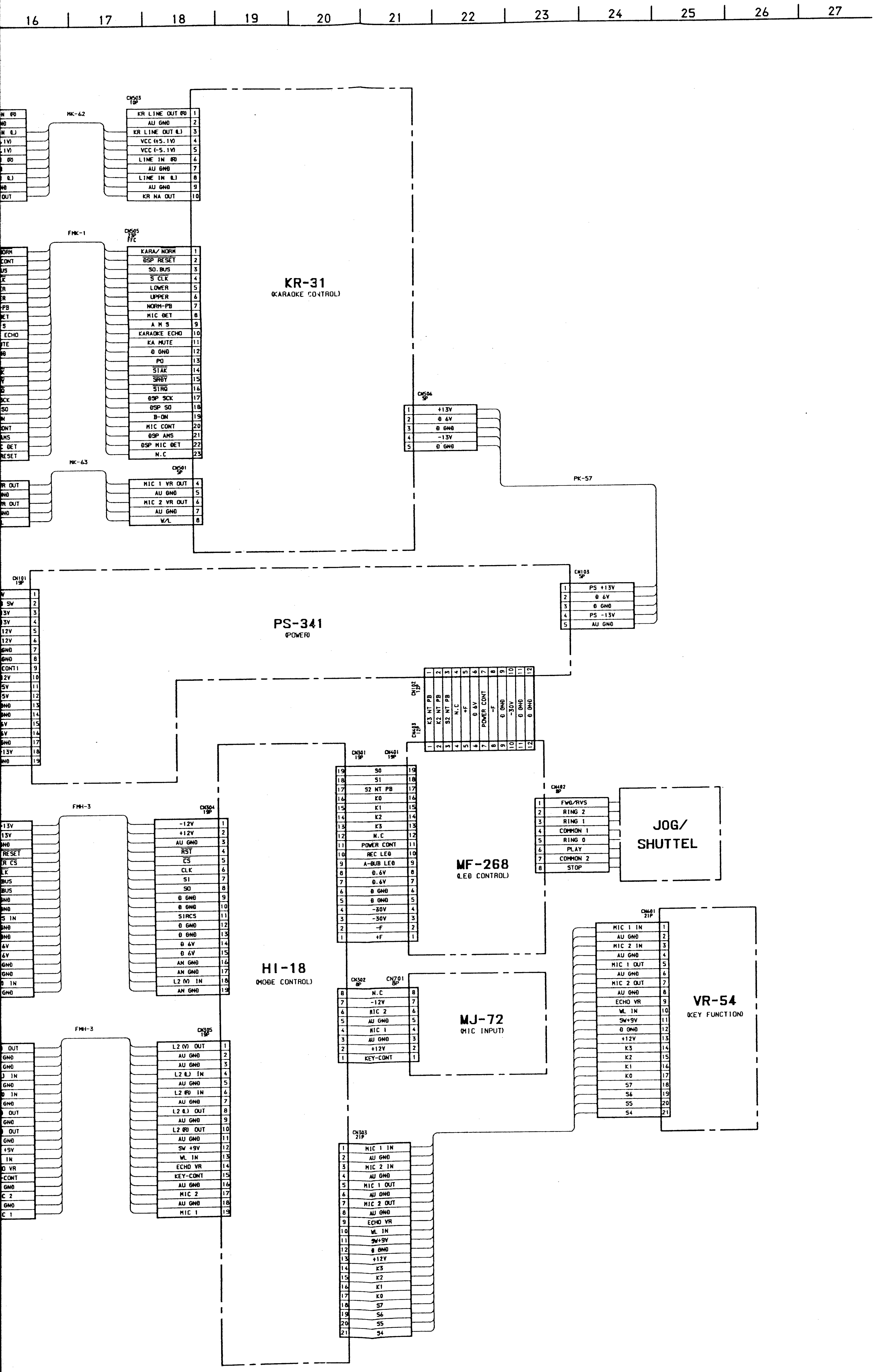
22
23
24
25
HF-34
(AUDIO PROCESS)
KR-31
(KARAOKE CONTROL)
PS-341
(POWER)
MA-242
(SERVO/SYSTEM CONTROL TUNER INPUT/OUTPUT)
MF-268
(LED CONTROL)
JOG/ SHUTTEL
HI-18
(MODE CONTROL)
MJ-72
(MIC INPUT)
VR-54
(KEY FUNCTION)
CV-30
(REC/PB CONTROL)
M903 CAM MOTOR
CAM ENCODER
MK-62
FMK-1
MK-63
PK-57
FMH-3
FMH-3
HR-56
CN103
CN101
CN102
CN803
CN001
CN906
CN002
CN907
CN401
CN503
CN911
CN505
CN702
CN501
CN504
CN910
CN101
CN103
CN102
CN403
CN301
CN401
CN402
CN905
CN304
CN302
CN701
CN601
CN904
CN305
CN303
CN501
PB RF IN
GND
REC RF OUT
PB RF
GND
REC RF
COMP SYNC
PAL JOG
NTSC JOG
REC CUR.
12V
REC
GND
HEAD CONT
RF ENV
REC P
RF SWP
RP SP
AF REC P
AF SWP
ME SECAM
3.58/4.43 NTSC
ACK
3.58 NTSC
NTSC
SECAM
Q.VD
GND
VIDEO OUT
GND
VIDEO IN
SW 5V
JOG
ORC ON
SHARPNESS
E TAPE
RENTAL
VPB
EDIT
LP
KR LINE IN (R)
AU GND
KR LINE IN (L)
VCC (+5.1V)
VEE (-5.1V)
LINE IN (R)
AU GND
LINE IN (L)
AU GND
KR NA OUT
KARA/NORM
KR AU CONT
SO.BUS
S CLK
LOWER
UPPER
NORM-PB
MIC DET
A M S
KARAOKE ECHO
KA MUTE
0 GND
PO
STAK
SRDY
SIRQ
DSP SCK
DSP SO
B-ON
MIC CONT
DSP AMS
DSP MIC DET
ASURA RESET
MIC 1 VR OUT
AU GND
MIC 2 VR OUT
AU GND
W/L
+13V
0 6V
0 GND
-13V
0 GND
35V
NT PB SW
PS 13V
MTR 12V
MTR GND
POWER CONT1
SW 12V
SW 5V
AN GND
0 6V
AU GND
PS -13V
0 GND
PS +13V
PS -13V
PS 13V
ASURA RESET
DRIVER CS
SCLK
SO BUS
SI BUS
SIRCS IN
L2 (V) IN
-12V
+12V
RST
CS
CLK
SI
SO
SIRCS
L2 (V) OUT
L2 (L) IN
L2 (R) IN
L2 (L) OUT
L2 (R) OUT
SW +9V
WL IN
ECHO VR
KEY-CONT
MIC 2
MIC 1
SO
SI
S2 NT PB
KO
K1
K2
K3
N.C
POWER CONT
REC LED
A-DUB LED
-30V
-F
+F
FWD/RVS
RING 2
RING 1
COMMON 1
RING 0
PLAY
COMMON 2
STOP
MIC 1 IN
MIC 2 IN
MIC 1 OUT
MIC 2 OUT
5W+9V
S7
S6
S5
S4
CAM (-)
N.C.
CAM (+)
MODE 4
MODE 2
MODE 1
GND (DID)
CTL (X)
AN GND
CTL (Y)
VEE (-5.1V)
UNREG -VEE
GND (AU)
UNREG +VCC
VCC (+5.1V)
RF ENV.
A MUTE
AF SWP
D GND
DATA
CLK
LINE IN (L)
LEVEL VR (L)
LEVEL IN (R)
LEVEL VR (R)
NORMAL AU
LEVEL VR VCC
RF CONV OUT
GND (AU)
LINE OUT (L)
GND (AU)
LINE OUT (R)
D 5V (ASURA)
AF 5V POS
RF 5V POS
D GND
AN 5V
CTL STEP (A4)
PB CTL (A1)
DRUM PG OUT (A2)
DRUM PG IN
CAP PG OUT (A3)
CAP FG IN
CTL-REC (A5)
CTL-INDEX (A6)
REC CTL (A7)
AN GND


16
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23
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KR-31
(KARAOKE CONTROL)
PS-341
(POWER)
HI-18
(MODE CONTROL)
MF-268
(LED CONTROL)
MJ-72
(MIC INPUT)
JOG/
SHUTTEL
VR-54
(KEY FUNCTION)
MK-62
FMK-1
MK-63
PK-57
FMH-3
FMH-3
CN503
10P
KR LINE OUT (R)
AU GND
KR LINE OUT (L)
VCC (+5.1V)
VCC (-5.1V)
LINE IN (R)
AU GND
LINE IN (L)
AU GND
KR NA OUT
CN505
23P
FFC
KARA/ NORM
DSP RESET
SO. BUS
S CLK
LOWER
UPPER
NORM-PB
MIC DET
A M S
KARAOKE ECHO
KA MUTE
D GND
PO
STAK
SRDY
SIRQ
DSP SCK
DSP SO
B-ON
MIC CONT
DSP AMS
DSP MIC DET
N.C
CN501
5P
MIC 1 VR OUT
AU GND
MIC 2 VR OUT
AU GND
W/L
CN504
5P
+13V
D 6V
D GND
-13V
D GND
CN103
5P
PS +13V
D 6V
D GND
PS -13V
AU GND
CN101
19P
CN102
12P
CN403
12P
K3 NT PB
K2 NT PB
S2 NT PB
N.C
+F
D 6V
POWER CONT
-F
D GND
-30V
D GND
CN301
19P
CN401
19P
SO
S1
S2 NT PB
K0
K1
K2
K3
N.C
POWER CONT
REC LED
A-DUB LED
D.6V
D.6V
D GND
D GND
-30V
-30V
-F
+F
CN402
8P
FWD/RVS
RING 2
RING 1
COMMON 1
RING 0
PLAY
COMMON 2
STOP
CN304
19P
-12V
+12V
AU GND
RST
CS
CLK
SI
SO
D GND
D GND
SIRCS
D GND
D GND
D 6V
D 6V
AN GND
AN GND
L2 (V) IN
AN GND
CN302
8P
CN701
8P
N.C
-12V
MIC 2
AU GND
MIC 1
AU GND
+12V
KEY-CONT
CN601
21P
MIC 1 IN
AU GND
MIC 2 IN
AU GND
MIC 1 OUT
AU GND
MIC 2 OUT
AU GND
ECHO VR
WL IN
SW+9V
D GND
+12V
K3
K2
K1
K0
S7
S6
S5
S4
CN305
19P
L2 (V) OUT
AU GND
AU GND
L2 (L) IN
AU GND
L2 (R) IN
AU GND
L2 (L) OUT
AU GND
L2 (R) OUT
AU GND
SW +9V
WL IN
ECHO VR
KEY-CONT
AU GND
MIC 2
AU GND
MIC 1
CN303
21P
MIC 1 IN
AU GND
MIC 2 IN
AU GND
MIC 1 OUT
AU GND
MIC 2 OUT
AU GND
ECHO VR
WL IN
SW+9V
D GND
+12V
K3
K2
K1
K0
S7
S6
S5
S4

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

● **For printed wiring boards.**

- ○ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side. *
- Circled numbers refer to waveforms.

● **For schematic diagram.**

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
- Chip resistors are 1/8W or 1/10W unless otherwise noted.
  k : 1000 , M : 1000k .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- △ : internal component.
- ▭ : adjustment for repair. *
- —— : B + Line. *
- - - - : B – Line. *
- ⇨ : IN/OUT direction of (+, –) B line. *
- Circled numbers refer to waveforms. *
- Voltages are dc between ground and measurement points. *
- Readings are taken with a color-bar signal (white level 75%) input. *
- Readings are taken with a digital multimeter (DC10M). *
- Voltage variations may be noted due to normal production tolerances. *

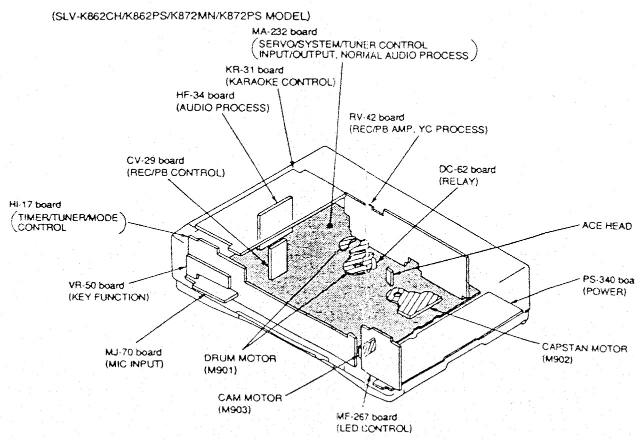
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Abbreviations

Abbreviated model name	All model names
K862	K862CH/K862PS
K872	K872MN/K872PS
KH3	KH3CH/KH3ME/KH3PS

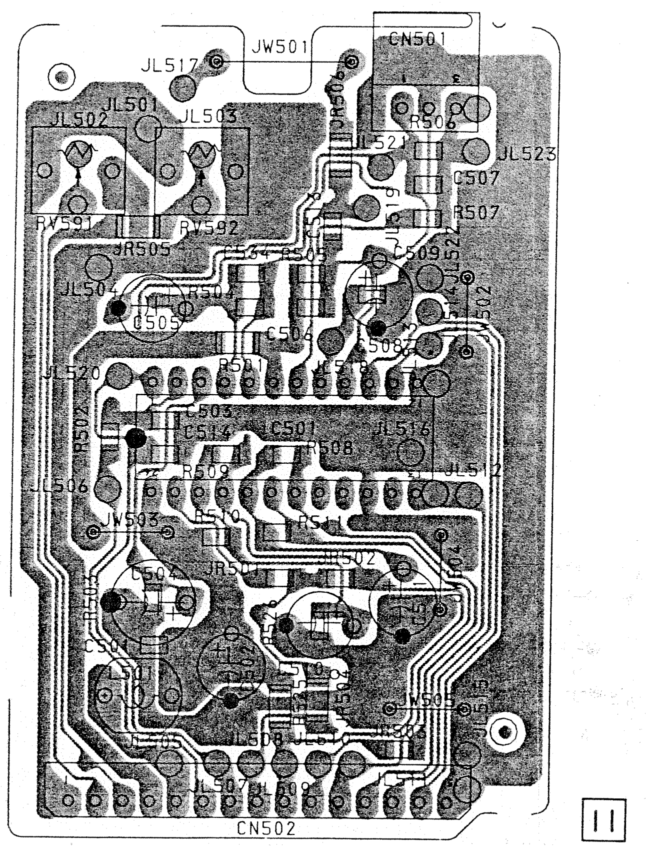
* : indicated by the color red.


(SLV-K862CH/K862PS/K872MN/K872PS MODEL)
MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

CV-29/30 (REC/PB CONTROL) PRINTED WIRING BOARD

— Ref. No. CV-29/30 BOARD : 3,000 series —

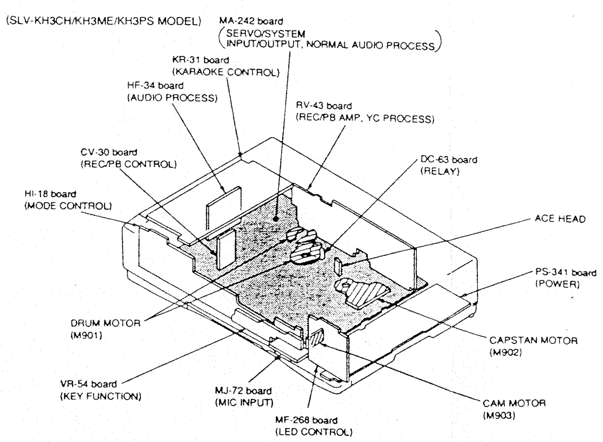
CV-29 BOARD (K862/K872 MODEL)
CV-30 BOARD (KH3 MODEL)


CN501
JW501
JL517
JL501
JL503
JL502
R506
JL521
JL523
C507
R507
RV591
RV592
JR505
C509
JL504
C505
C504
C508
JL520
R501
R503
C514
C501
JL516
R508
R509
JL512
JL506
JW503
R510
R511
C502
C503
JW505
R502
CN502
11

08

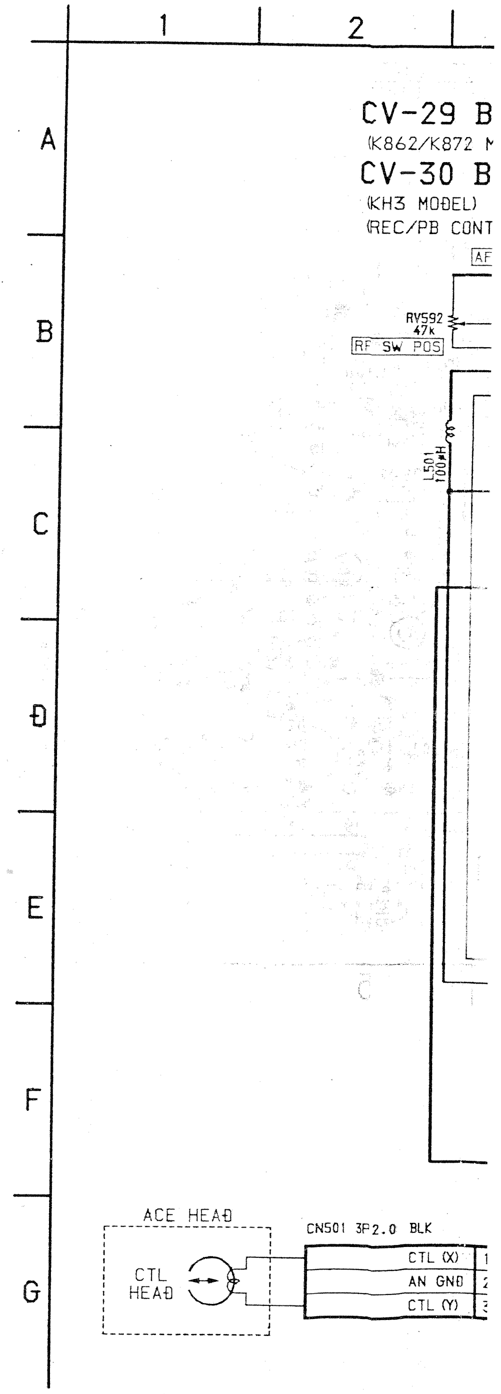
1-656-966-(CV-29)
1-656-980-(CV-30)

There are few cases that the part isn't mounted in this model is printed on this diagram.


(SLV-KH3CH/KH3ME/KH3PS MODEL)
MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
MF-268 board
(LED CONTROL)
CAM MOTOR
(M903)

CV-29/30 (REC/PB CONTROL) SCHE

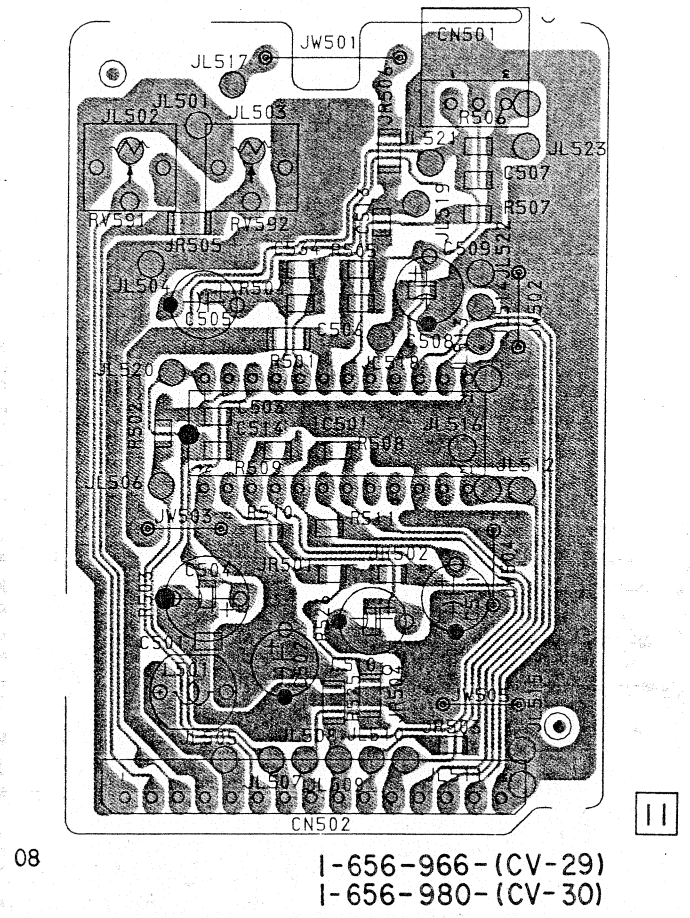
— Ref. No. CV-29/30 BOARD : 3,000 se


1
2
A
B
C
D
E
F
G
CV-29 B
(K862/K872 M
CV-30 B
(KH3 MODEL)
(REC/PB CONT
AF
RV592
47k
RF SW POS
L501
100μH
ACE HEAD
CTL HEAD
CN501 3P2.0 BLK
CTL (X)
AN GND
CTL (Y)

CV-29/30 (REC/PB CONTROL) PRINTED WIRING BOARD

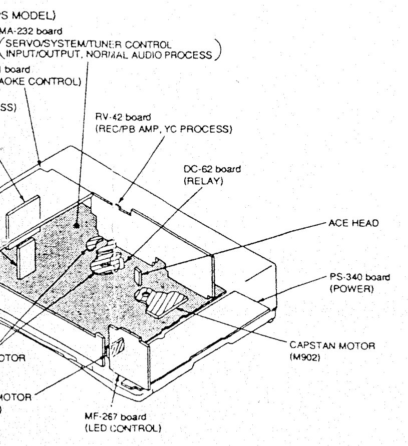
— Ref. No. CV-29/30 BOARD : 3,000 series —

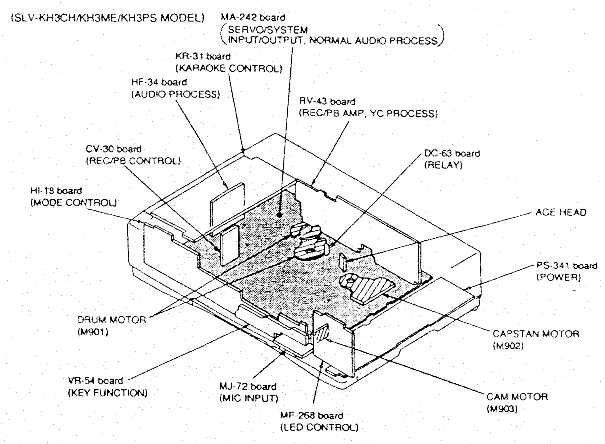
CV-29 BOARD (K862/K872 MODEL)
CV-30 BOARD (KH3 MODEL)


JW501
CN501
JL517
JL501
JL502
JL503
JL521
JL523
R506
C507
R507
RV591
RV592
JR505
R505
C509
JL504
C505
C504
JL520
JL516
JL512
JL506
JR503
R509
C502
C501
JR502
C503
C506
C508
JL515
CN502
11
08

1-656-966-(CV-29)
1-656-980-(CV-30)

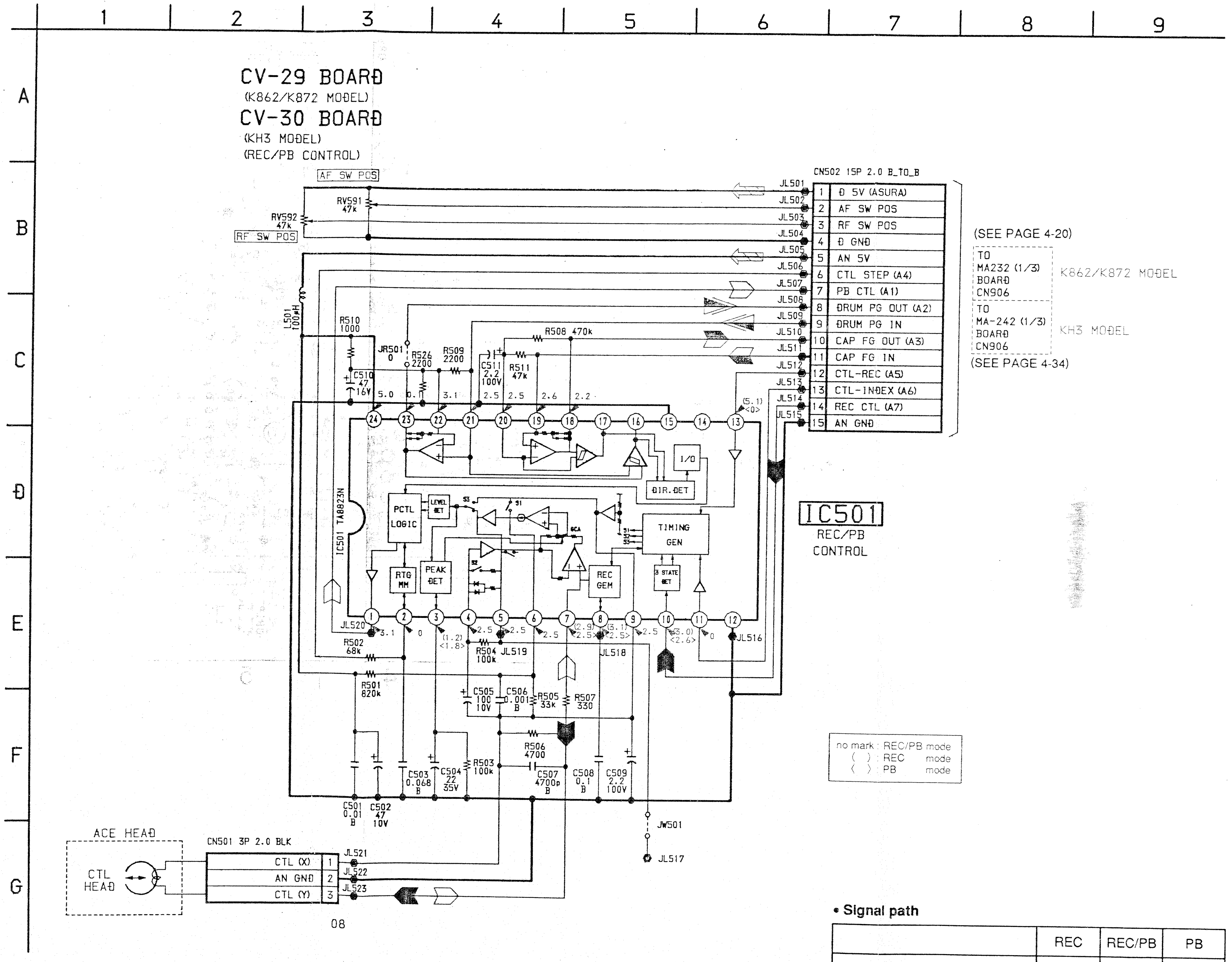
There are few cases that the part isn't mounted in this model is printed on this diagram.


S MODEL)
MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
board
AOKE CONTROL)
SS)
RV-42 board
(REC/PB AMP, YC PROCESS)
DC-62 board
(RELAY)
ACE HEAD
PS-340 board
(POWER)
CAPSTAN MOTOR
(M902)
MF-267 board
(LED CONTROL)
OTOR
MOTOR


(SLV-KH3CH/KH3ME/KH3PS MODEL)
MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
MF-268 board
(LED CONTROL)
CAM MOTOR
(M903)

CV-29/30 (REC/PB CONTROL) SCHEMATIC DIAGRAM

— Ref. No. CV-29/30 BOARD : 3,000 series —


1
2
3
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7
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9
A
B
C
D
E
F
G
CV-29 BOARD
(K862/K872 MODEL)
CV-30 BOARD
(KH3 MODEL)
(REC/PB CONTROL)
AF SW POS
RF SW POS
RV591 47k
RV592 47k
CN502 15P 2.0 B_TO_B
JL501
JL502
JL503
JL504
JL505
JL506
JL507
JL508
JL509
JL510
JL511
JL512
JL513
JL514
JL515
1 D 5V (ASURA)
2 AF SW POS
3 RF SW POS
4 D GND
5 AN 5V
6 CTL STEP (A4)
7 PB CTL (A1)
8 DRUM PG OUT (A2)
9 DRUM PG IN
10 CAP FG OUT (A3)
11 CAP FG IN
12 CTL-REC (A5)
13 CTL-INDEX (A6)
14 REC CTL (A7)
15 AN GND
(SEE PAGE 4-20)
TO
MA232 (1/3)
BOARD
CN906
K862/K872 MODEL
TO
MA-242 (1/3)
BOARD
CN906
KH3 MODEL
(SEE PAGE 4-34)
L501 100uH
R510 1000
JR501 0
R526 2200
R509 2200
C510 47 16V
C511 2.2 100V
R511 47k
R508 470k
5.0
3.1
2.5
2.6
2.2
(5.1) <0>
I/O
DIR.DET
PCTL LOGIC
LEVEL DET
TIMING GEN
RTG MM
PEAK DET
REC GEN
3 STATE DET
IC501 TA8823N
IC501
REC/PB
CONTROL
JL520
R502 68k
R504 100k
JL519
JL518
JL516
(1.2) <1.8>
(2.9) <2.5>
(3.1) <2.5>
(5.0) <2.6>
R501 820k
C505 100 10V
C506 0.001 B
R505 33k
R507 330
R506 4700
C503 0.068 B
C504 22 35V
R503 100k
C507 4700p B
C508 0.1 B
C509 2.2 100V
C501 0.01 B
C502 47 10V
JW501
JL517
ACE HEAD
CTL HEAD
CN501 3P 2.0 BLK
1 CTL (X)
2 AN GND
3 CTL (Y)
JL521
JL522
JL523
08

no mark : REC/PB mode
( ) : REC mode
〈 〉 : PB mode

- **Signal path**

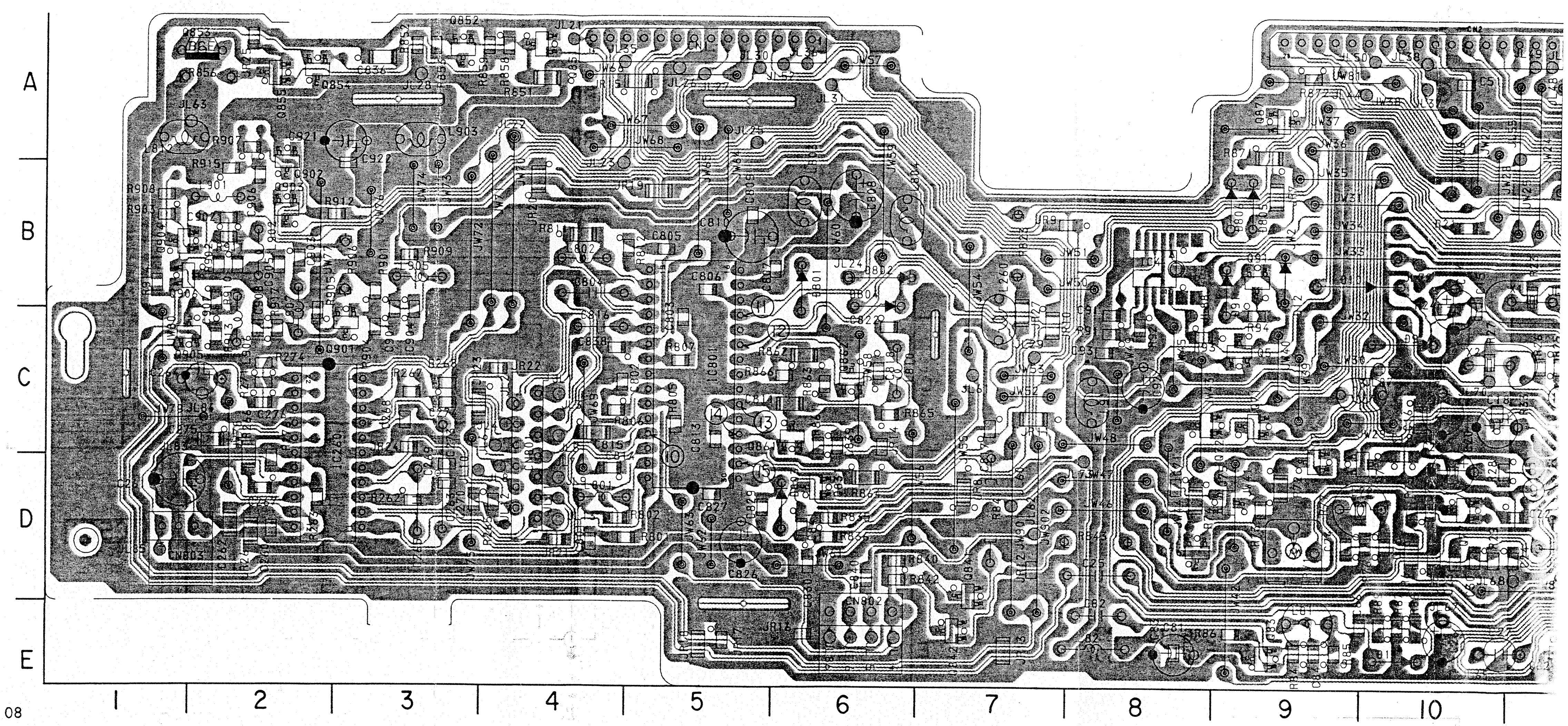
	REC	REC/PB	PB
Drum phase servo		▷	
Capstan speed servo		▶	
Ref. signal	➧		▷

REC PB CONTROL
CV-29/30

RV-42/43 (REC/PB AMP, Y/C VIDEO PROCESS) PRINTED WIRING BOARD

— Ref. No. RV-42/43 BOARD : 8,000 series —

RV-42 BOARD (K862/K872 MODEL)
RV-43 BOARD (KH3 MODEL)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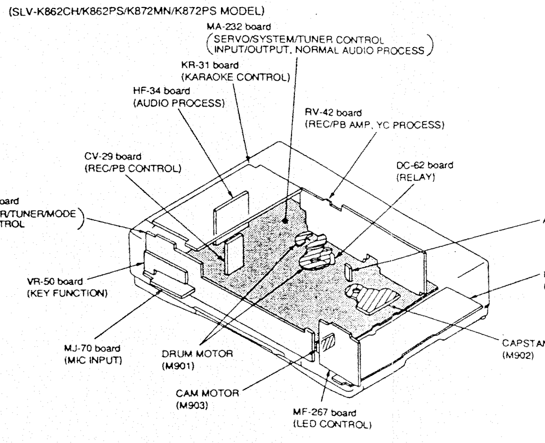
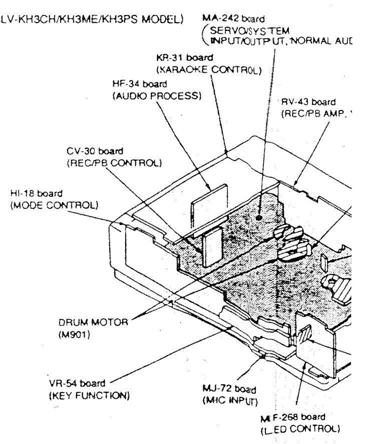
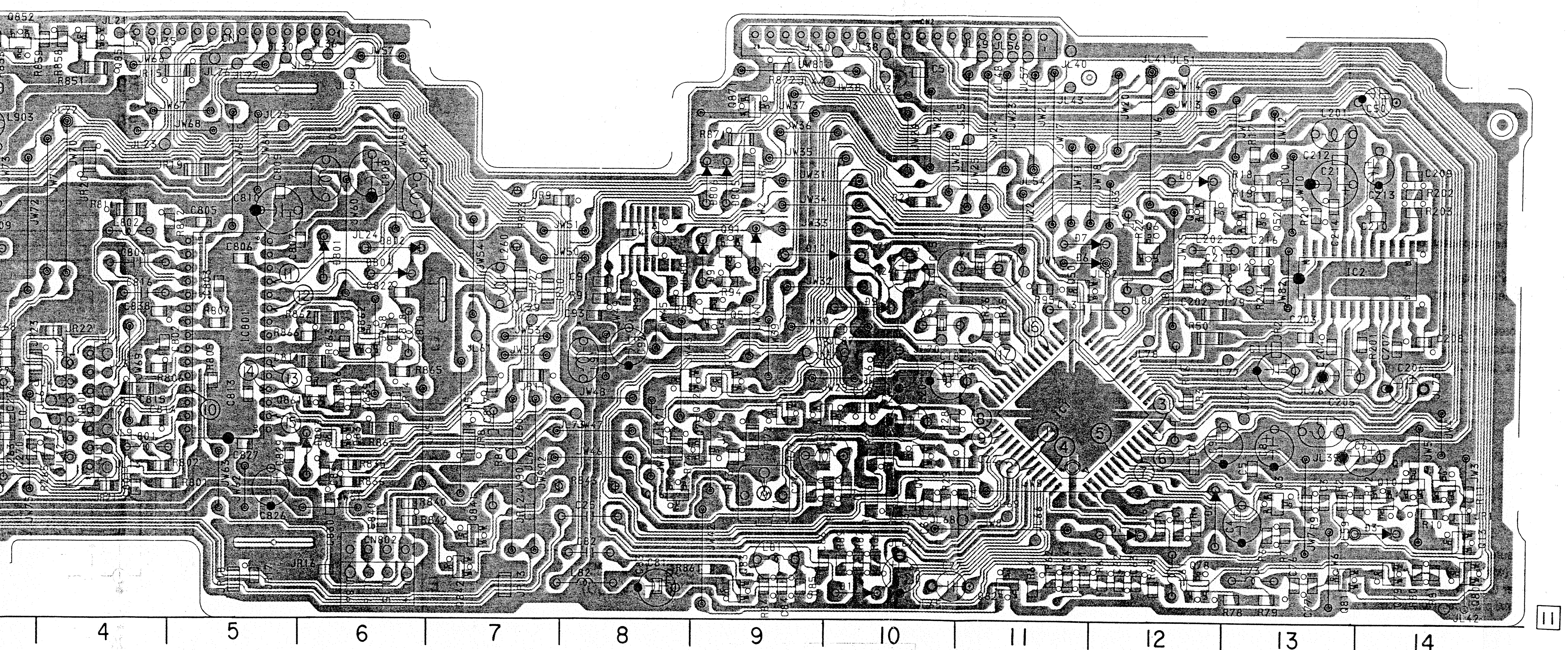

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)
MA-232 board (SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board (KARAOKE CONTROL)
HF-34 board (AUDIO PROCESS)
RV-42 board (REC/PB AMP, YC PROCESS)
CV-29 board (REC/PB CONTROL)
DC-62 board (RELAY)
HI-17 board (TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board (KEY FUNCTION)
PS-340 board (POWER)
CAPSTAN MOTOR (M902)
MJ-70 board (MIC INPUT)
DRUM MOTOR (M901)
CAM MOTOR (M903)
MF-267 board (LED CONTROL)


(SLV-KH3CH/KH3ME/KH3PS MODEL)
MA-242 board (SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUD
KR-31 board (KARAOKE CONTROL)
HF-34 board (AUDIO PROCESS)
RV-43 board (REC/PB AMP,
CV-30 board (REC/PB CONTROL)
HI-18 board (MODE CONTROL)
DRUM MOTOR (M901)
VR-54 board (KEY FUNCTION)
MJ-72 board (MIC INPUT)
MF-268 board (LED CONTROL)

PRINTED WIRING BOARD

DEL)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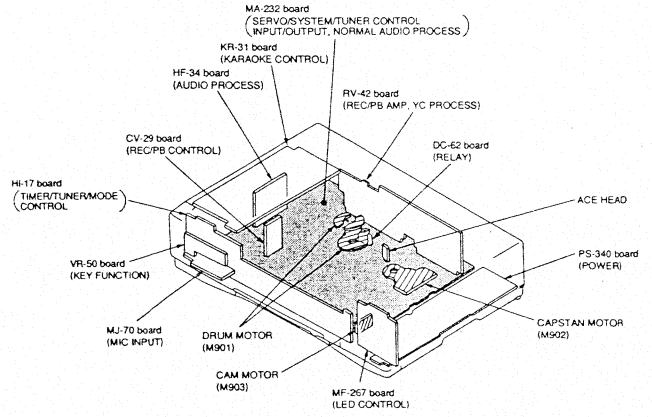
RV-42/43 BOARD

CN001	A-5
CN002	A-10
CN801	C-4
CN802	E-6
CN803	D-1
D001	D-11
D008	B-12
D009	C-10
D010	B-9
D011	E-9
D012	B-9
D091	B-8
D801	B-5
D802	B-6
D803	D-5
D804	B-6
IC001	C-11
IC002	B-13
IC004	B-8
IC260	D-2
IC801	C-5
Q003	D-13
Q005	C-8
Q006	B-11
Q007	D-9
Q010	D-13
Q011	D-14
Q012	D-14
Q013	D-14
Q071	C-8
Q072	C-8
Q074	C-9
Q075	D-8
Q076	D-8
Q077	D-10
Q078	E-12
Q079	E-14
Q080	E-14
Q081	E-13
Q082	E-11
Q083	E-9
Q091	B-8
Q831	D-6
Q841	D-7
Q842	E-6
Q851	A-4
Q852	A-3
Q853	A-1
Q854	A-2
Q855	A-2
Q861	C-5
Q862	C-6
Q901	C-2
Q902	B-2
Q904	B-1
Q905	C-1
Q906	B-1

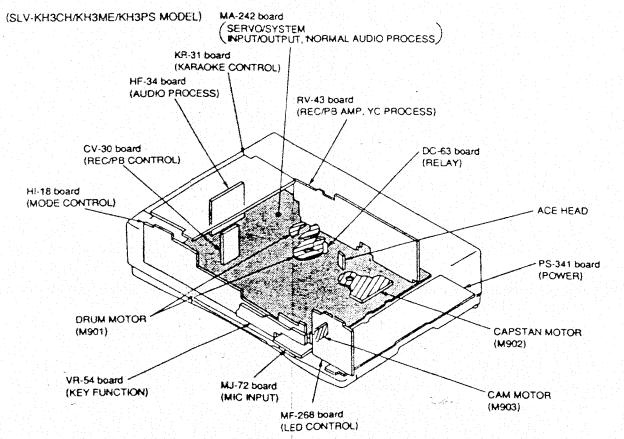
1-656-961-(RV-42)
1 656-975-(RV-43)

There are few cases that the part isn't mounted in this model is printed on this diagram.

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

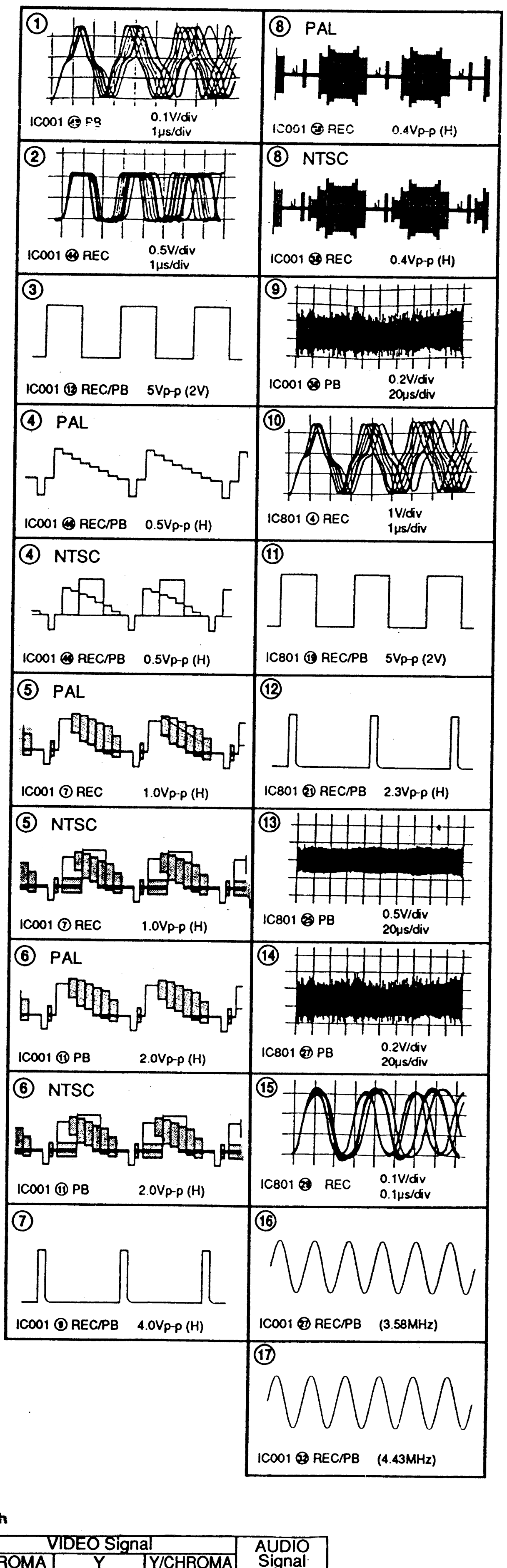
(SLV-KH3CH/KH3ME/KH3PS MODEL)


MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

RV-42/43 (REC/PB AMP, Y/C VIDEO PROCESS) SCHEMATIC DIAGRAM

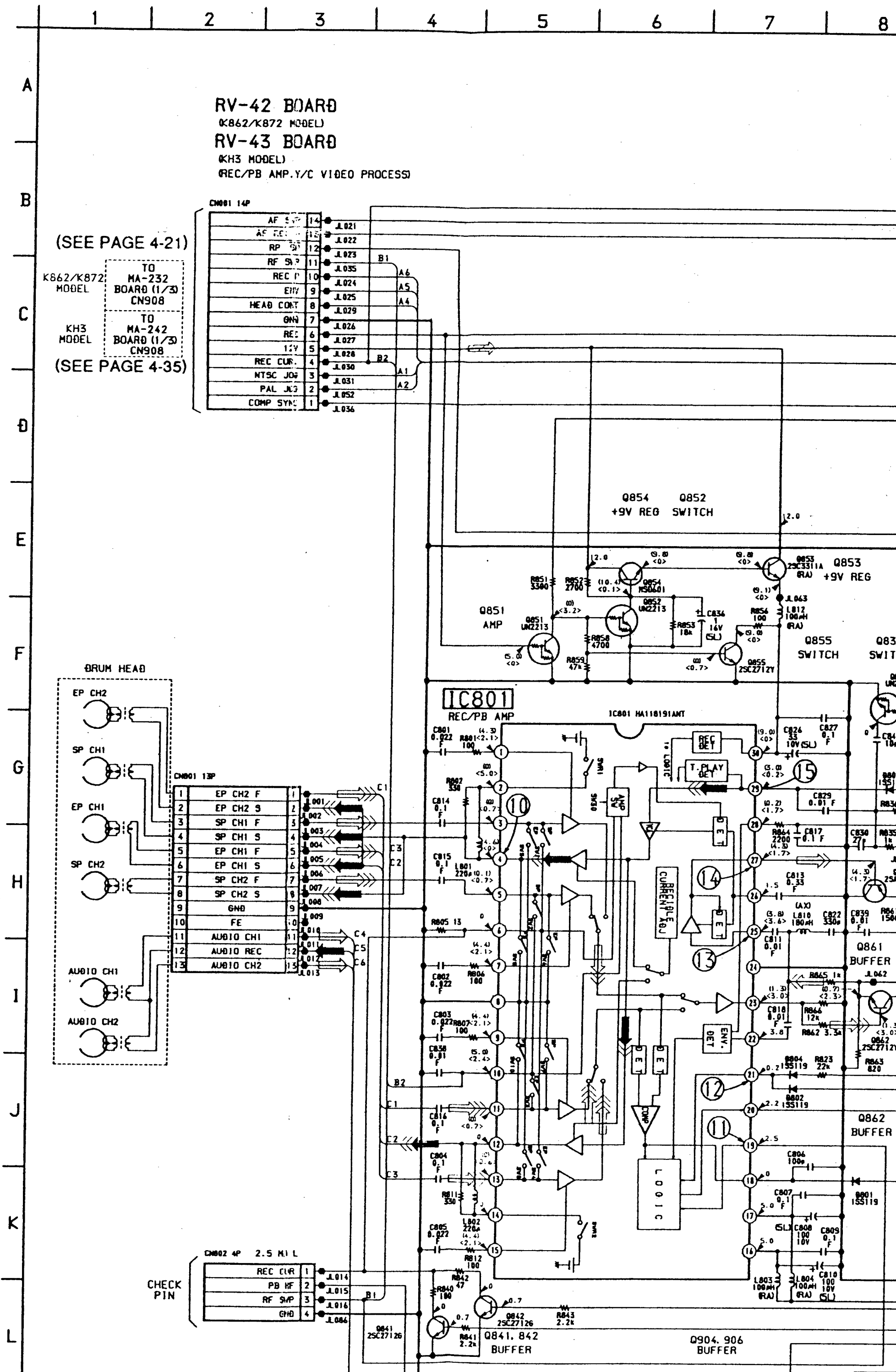
— Ref. No. RV-42/43 BOARD : 8,000 series —

RV-42/43 BOARD



- **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡	➡	➡
PB	⇨	⇨	⇨	⇨



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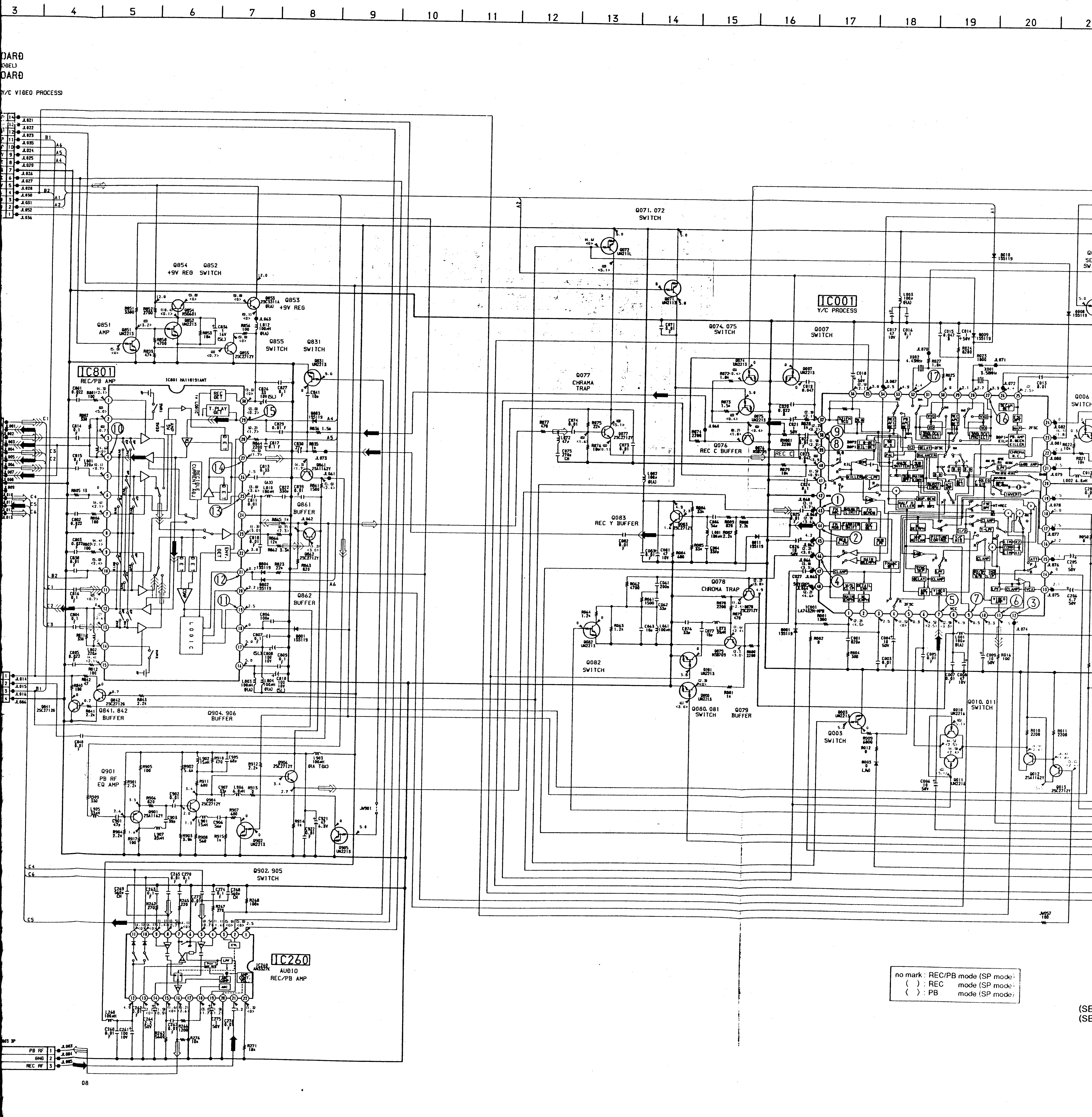
RV-42 BOARD
(K862/K872 MODEL)
RV-43 BOARD
(KH3 MODEL)
(REC/PB AMP,Y/C VIDEO PROCESS)
(SEE PAGE 4-21)
K862/K872 MODEL
TO MA-232 BOARD (1/3) CN908
KH3 MODEL
TO MA-242 BOARD (1/3) CN908
(SEE PAGE 4-35)
Q854 Q852 +9V REG SWITCH
Q853 +9V REG
Q851 AMP
Q855 SWITCH
DRUM HEAD
EP CH2
SP CH1
EP CH1
SP CH2
AUDIO CH1
AUDIO CH2
IC801
REC/PB AMP
Q861 BUFFER
Q862 BUFFER
CHECK PIN
Q841, 842 BUFFER
Q904, 906 BUFFER
Q901 PB RF EQ AMP
Q902, 905 SWITCH
IC260
AUDIO REC/PB AMP
TO HF-34 BOARD CN103
(SEE PAGE 4-43)

, Y/C VIDEO PROCESS) SCHEMATIC DIAGRAM

RD : 8,000 series —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OARD
Y/C VIDEO PROCESS
Q854 Q852
+9V REG SWITCH
Q853
+9V REG
Q851
AMP
Q855
SWITCH
Q831
SWITCH
IC801
REC/PB AMP
IC801 HA118191ANT
Q841, 842
BUFFER
Q904, 906
BUFFER
Q861
BUFFER
Q862
BUFFER
Q901
PB RF
EQ AMP
Q902, 905
SWITCH
IC260
AUDIO
REC/PB AMP
PB RF
GND
REC RF
Q071, 072
SWITCH
Q077
CHRAMA
TRAP
Q074, 075
SWITCH
Q076
REC C BUFFER
Q083
REC Y BUFFER
Q078
CHROMA TRAP
Q082
SWITCH
Q080, 081
SWITCH
Q079
BUFFER
Q003
SWITCH
IC001
Y/C PROCESS
Q007
SWITCH
IC001
LA7432M-MPB
Q010, 011
SWITCH
Q006
SWITCH

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
⟨ ⟩ : PB mode (SP mode)

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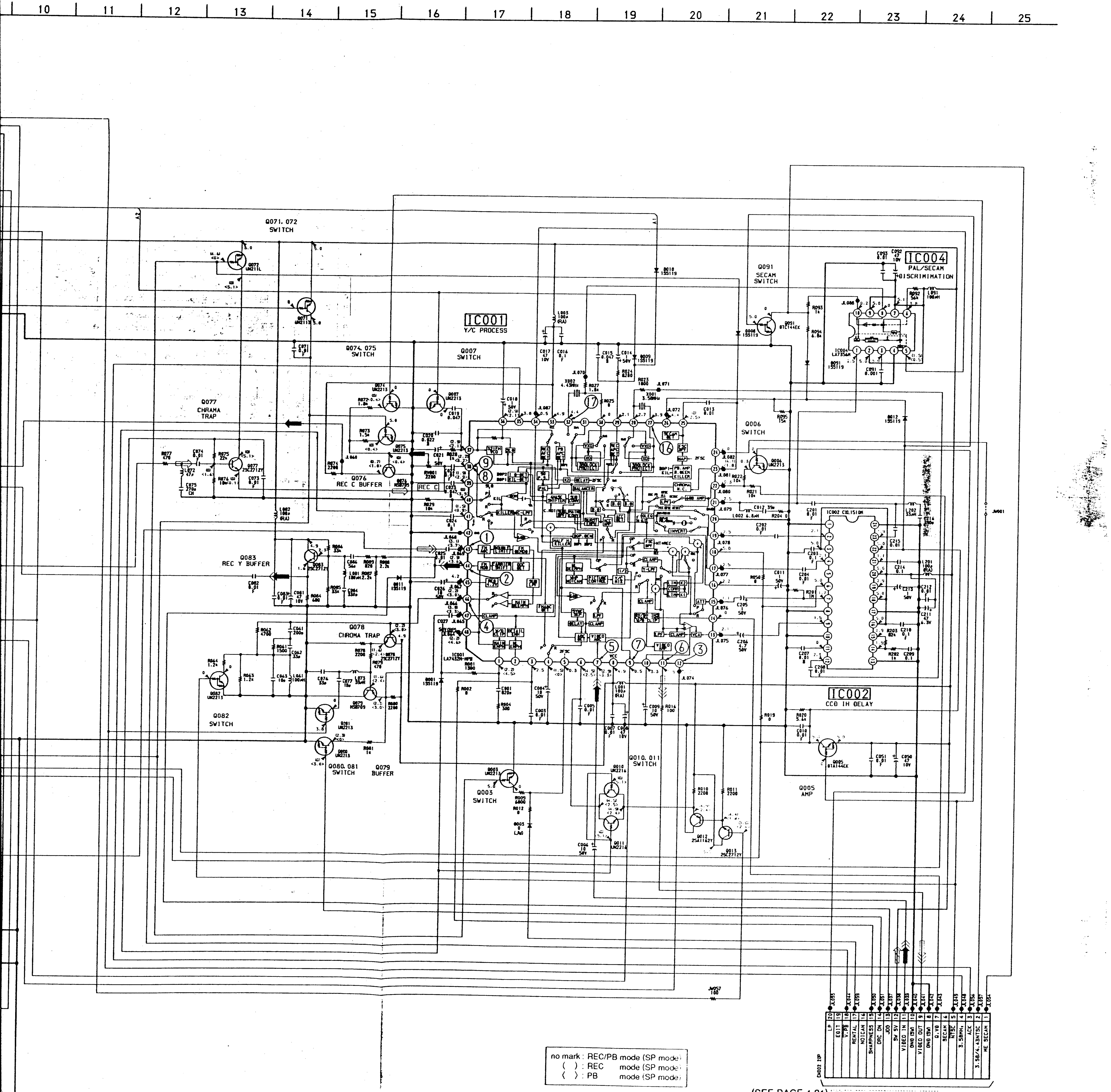
(SE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Q071, 072
SWITCH
Q091
SECAM
SWITCH
IC004
PAL/SECAM
DISCRIMINATION
IC001
Y/C PROCESS
Q074, 075
SWITCH
Q007
SWITCH
Q077
CHRAMA
TRAP
Q076
REC C BUFFER
REC C
Q006
SWITCH
Q083
REC Y BUFFER
Q078
CHROMA TRAP
IC001
LA7432M-MPB
Q082
SWITCH
Q080, 081
SWITCH
Q079
BUFFER
Q003
SWITCH
Q010, 011
SWITCH
IC002 CCD1SION
IC002
CCD 1H DELAY
Q005
AMP
CN002 20P
20 LP
19 EDIT
18 V.PB
17 RENTAL
16 NOICAN
15 SHARPNESS
14 DRC ON
13 JOG
12 SW 5V
11 VIDEO IN
10 GND (SW)
9 VIDEO OUT
8 GND (SW)
7 Q.V0
6 SECAM
5 NTSC
4 3.58MHz
3 ACK
2 3.58/4.43NTSC
1 ME SECAM
JL055
JL044
JL059
JL050
JL051
JL037
JL038
JL039
JL040
JL041
JL042
JL043
JL049
JL048
JL056
JL057
JL054

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)

(SEE PAGE 4-21) TO MA-232 BOARD (1/3) CN907 K862/K872 MODEL
(SEE PAGE 4-35) TO MA-242 BOARD (1/3) CN907 KH3 MODEL

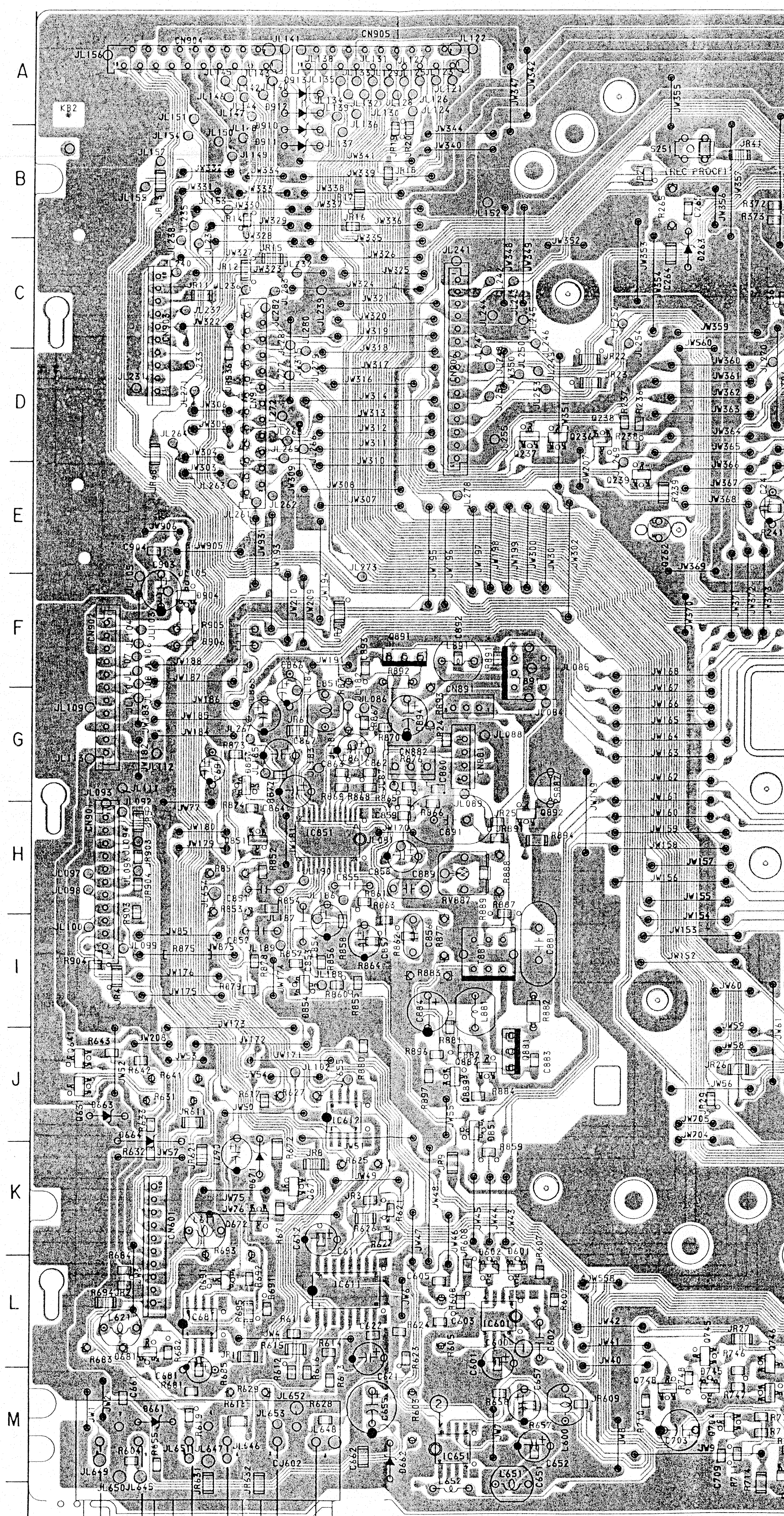
MA-232 (SERVO/SYSTEM CONTROL), DC-62 (RELAY) PRINTED WIRING BOARD (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. MA-232 BOARD : 1,000 series, DC-62 BOARD : 3,000 series —

MA-232 BOARD

CN271	G-18	IC201	E-9
CN275	J-10	IC251	C-13
CN281	C-17	IC291	H-12
CN291	B-18	IC351	C-8
CN601	K-2	IC401	I-15
CN881	G-4	IC402	I-17
CN882	G-4	IC601	L-5
CN891	G-4	IC611	L-3
CN901	H-1	IC612	J-3
CN902	F-1	IC651	M-4
CN904	A-2	IC681	L-2
CN905	A-4	IC851	H-3
CN906	D-4		
CN907	L-14	Q236	D-5
CN908	L-10	Q237	D-5
CN910	D-19	Q238	D-6
CN911	D-2	Q239	E-6
		Q243	D-8
D202	G-13	Q244	D-8
D206	F-9	Q261	E-19
D243	D-8	Q262	E-6
D251	C-13	Q263	A-13
D261	D-12	Q351	C-8
D265	A-12	Q353	B-8
D267	B-14	Q354	E-8
D291	H-11	Q401	H-16
D402	H-15	Q402	H-17
D403	K-11	Q404	I-16
D601	L-5	Q405	H-16
D602	L-5	Q406	J-15
D661	M-2	Q407	J-16
D662	M-4	Q631	J-1
D663	J-1	Q641	J-1
D664	J-1	Q671	K-3
D671	K-3	Q672	K-3
D681	L-2	Q702	M-12
D691	L-2	Q703	L-14
D702	L-15	Q705	M-7
D703	M-14	Q707	K-18
D709	K-19	Q709	L-11
D710	K-19	Q745	L-7
D745	M-7	Q746	L-7
D851	J-4	Q747	M-7
D854	I-3	Q748	M-6
D902	A-17	Q881	J-5
D904	F-2	Q882	J-4
D910	B-3	Q889	J-4
D911	B-3	Q891	F-4
D912	A-3	Q892	H-5
D913	A-3		

MA-232 BOARD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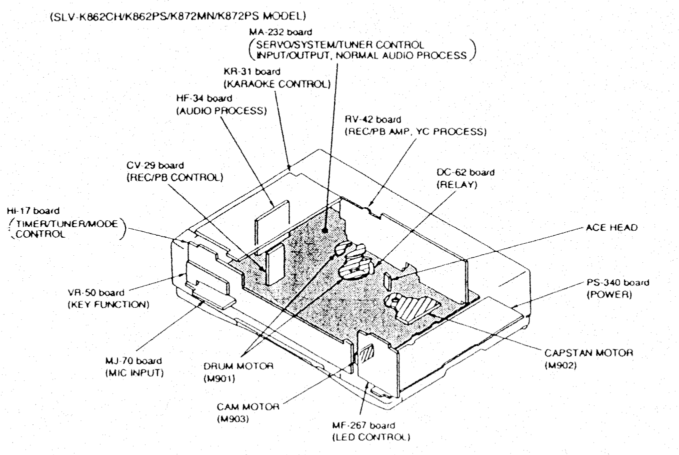
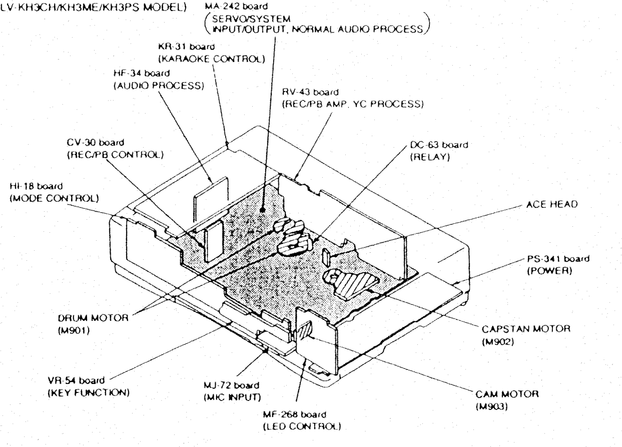
CN904
CN905
CN902
CN901
KB2
VIDEO
AUDIO L
AUDIO R
LINE IN
LINE OUT

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

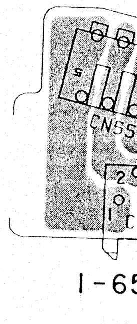

MA-232 board
(SERVO/SYSTEM/TUNER CONTROL
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
PS-340 board
(POWER)
VR-50 board
(KEY FUNCTION)
CAPSTAN MOTOR
(M902)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)


MA-242 board
(SERVO/SYSTEM
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

There are few cases that the part isn't mounted in this model is printed on this diagram.

DC-6



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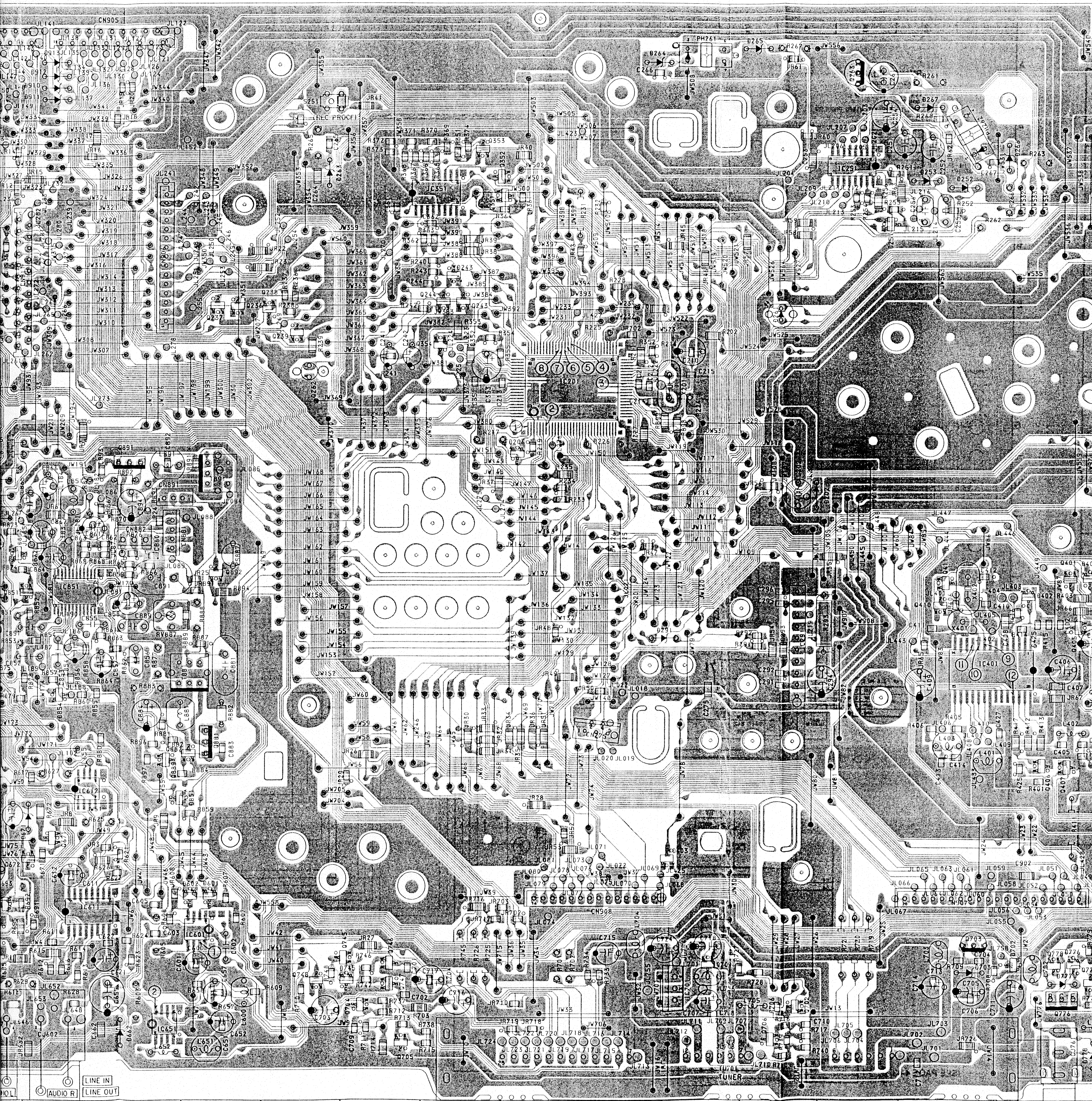
TEM CONTROL), DC-62 (RELAY) PRINTED WIRING BOARD

/K872MN/K872PS MODEL)

ARD : 1,000 series, DC-62 BOARD : 3,000 series —


CN905
CN908
IC351
IC401
IC601
IC651
IC851
TUNER
LINE IN
LINE OUT
AUDIO R
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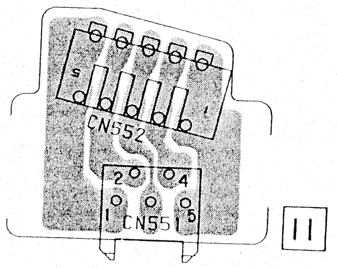
DC-62 BOARD


CN552
CN551
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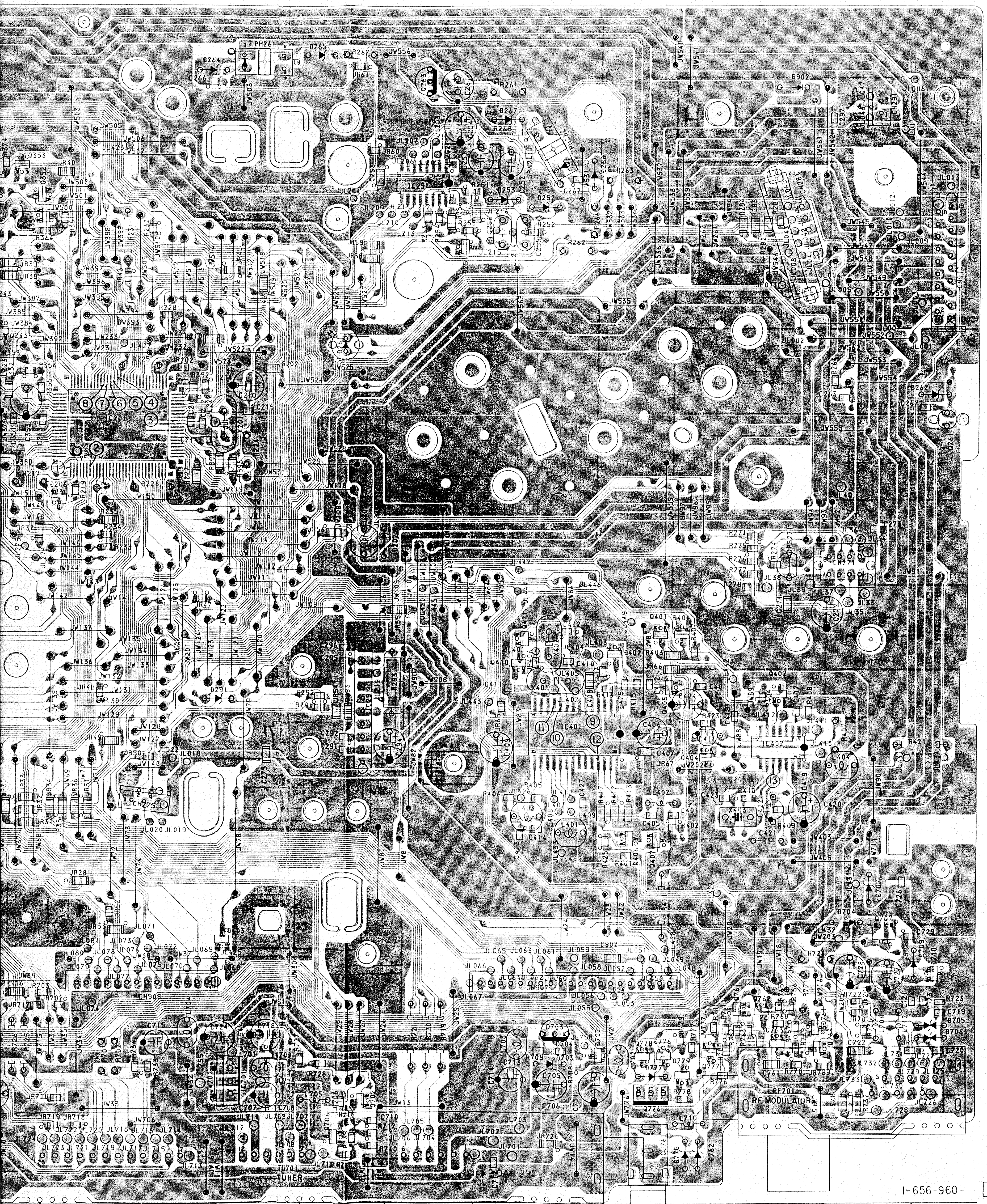
08 1-656-965-


RF MODULATOR
TUNER
CN908
IC401
IC402
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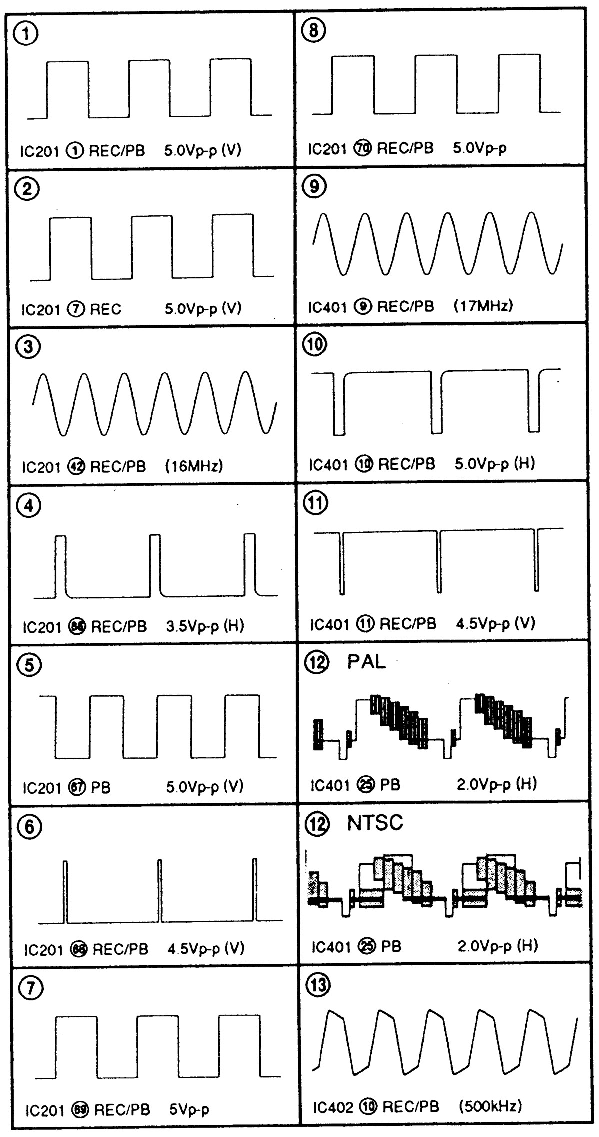
MA-232 BOARD



- **Signal path**

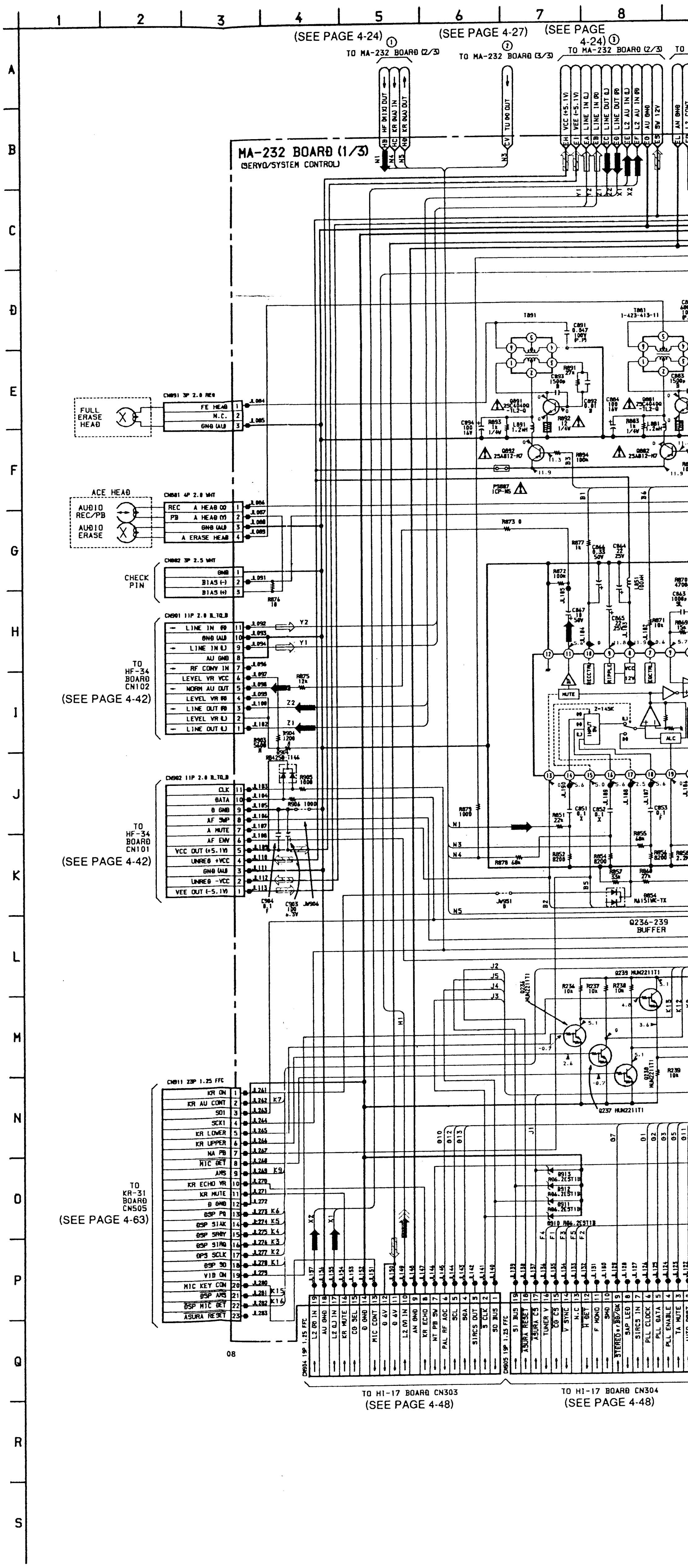
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡≫	➡
PB			⇨≫	⇨

- **Signal path**

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶≫	
Drum servo (speed and phase)		▶≫≫	
Capstan speed servo		➤	
Capstan servo (speed and phase)		➤≫	
Ref. signal	➤		▷

MA-232 (SERVO/SYSTEM CONTROL), DC-62 (RELAY) SCHEMATIC DIAGRAM (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. MA-232 BOARD : 1,000 series, DC-62 BOARD : 3,000 series —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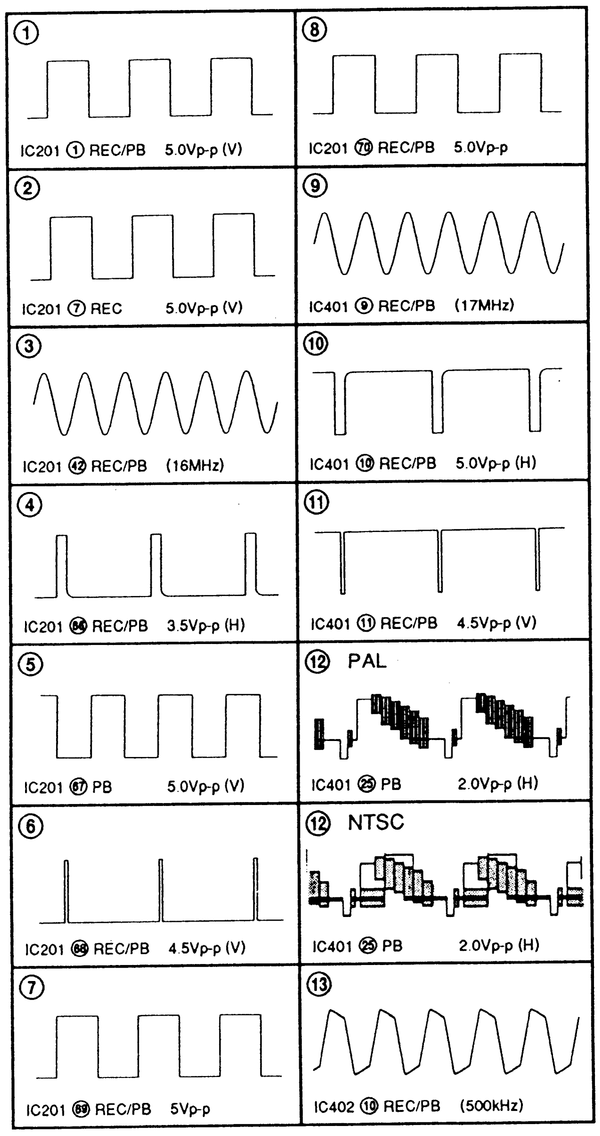
(SEE PAGE 4-24) ①
TO MA-232 BOARD (2/3)
(SEE PAGE 4-27) ②
TO MA-232 BOARD (3/3)
(SEE PAGE 4-24) ①
TO MA-232 BOARD (2/3)
MA-232 BOARD (1/3)
(SERVO/SYSTEM CONTROL)
FULL ERASE HEAD
ACE HEAD
AUDIO REC/PB
AUDIO ERASE
CHECK PIN
TO HF-34 BOARD CN102
(SEE PAGE 4-42)
TO HF-34 BOARD CN101
(SEE PAGE 4-42)
TO KR-31 BOARD CN505
(SEE PAGE 4-63)
Q236-239 BUFFER
TO HI-17 BOARD CN303
(SEE PAGE 4-48)
TO HI-17 BOARD CN304
(SEE PAGE 4-48)

MA-232 BOARD



- **Signal path**

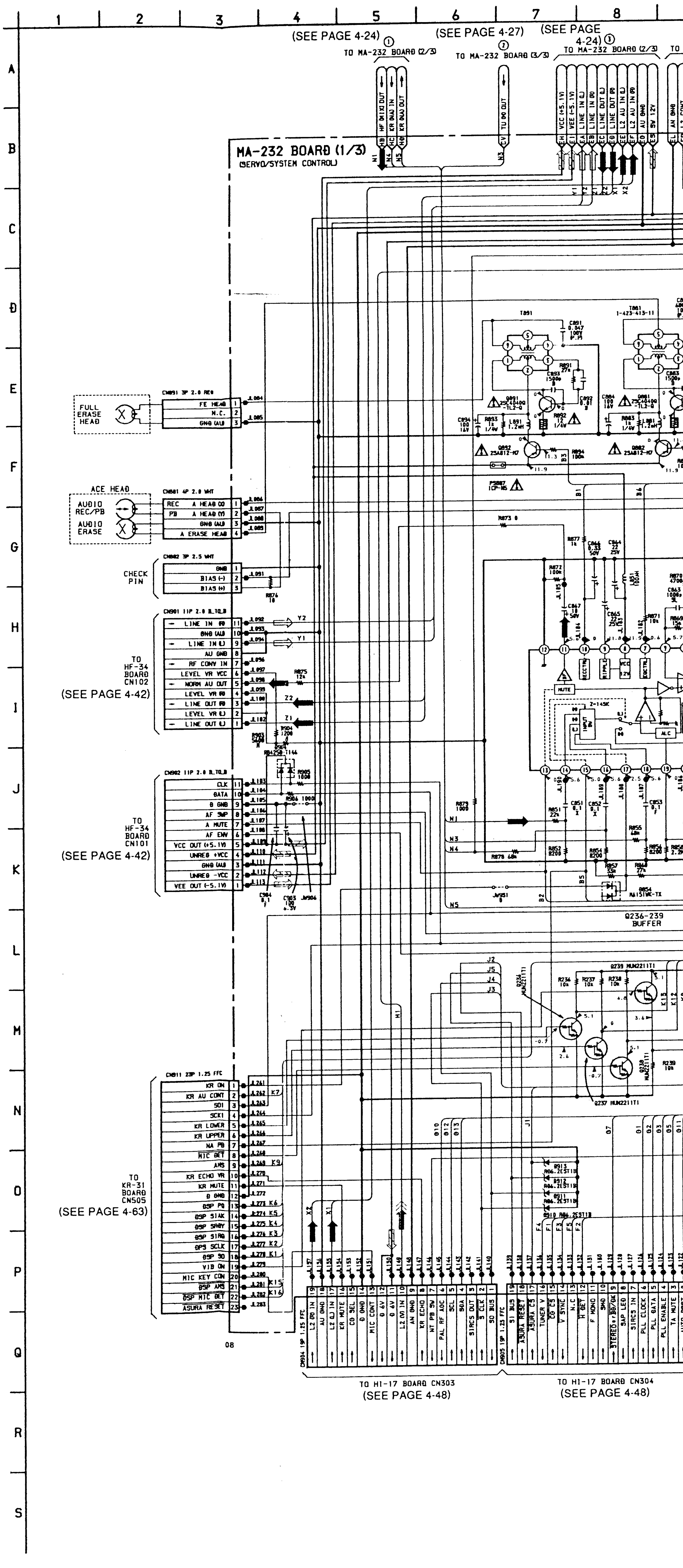
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

- **Signal path**

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▷	
Drum servo (speed and phase)		▶▷	
Capstan speed servo		➢	
Capstan servo (speed and phase)		➢▷	
Ref. signal	➧		⇨

MA-232 (SERVO/SYSTEM CONTROL), DC-62 (RELAY) SCHEMATIC DIAGRAM (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. MA-232 BOARD : 1,000 series, DC-62 BOARD : 3,000 series —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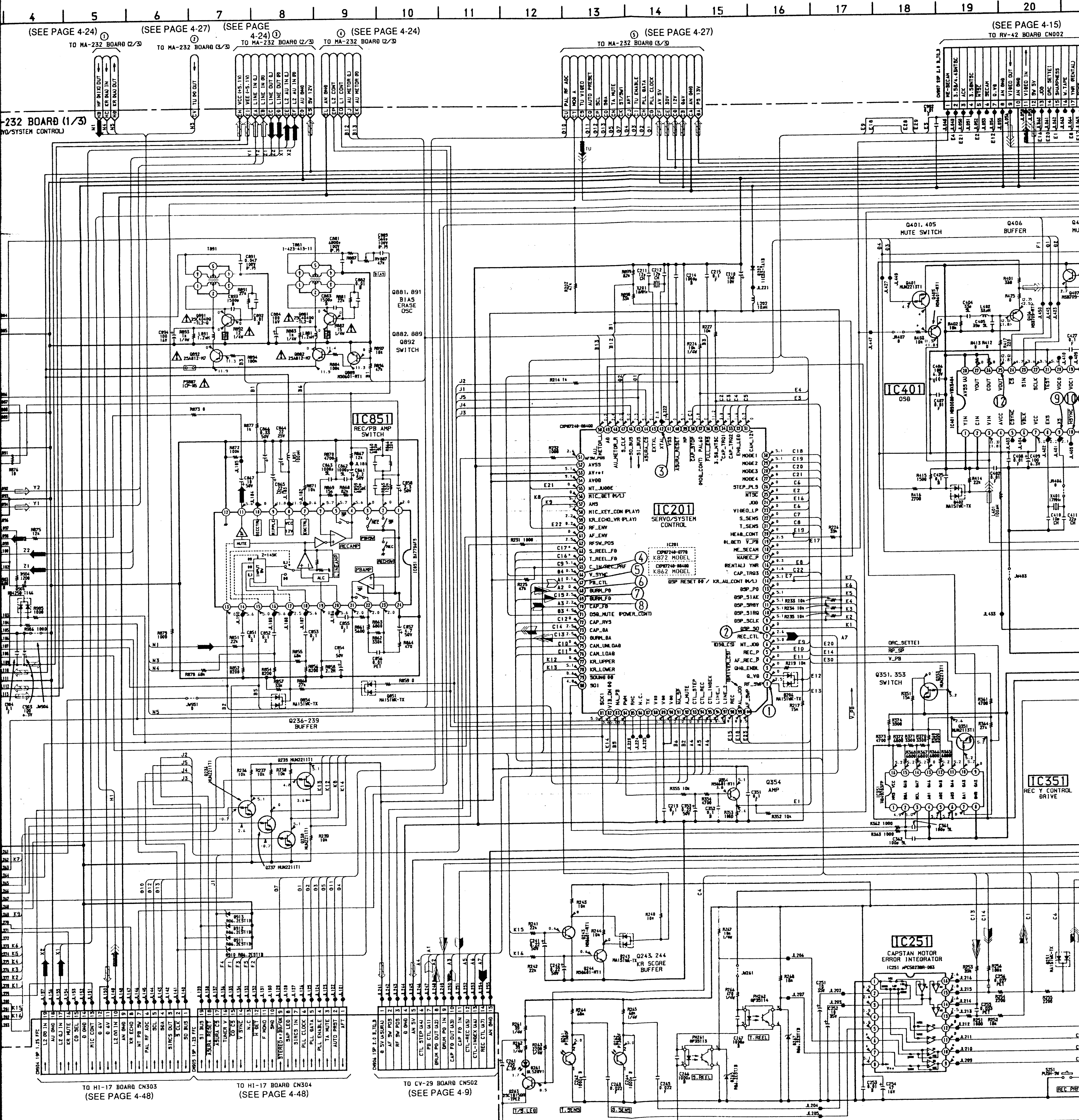
S
(SEE PAGE 4-24) ①
TO MA-232 BOARD (2/3)
HF (MIX) OUT
KR (NA) IN
KR (NA) OUT
(SEE PAGE 4-27) ②
TO MA-232 BOARD (3/3)
TU (V) OUT
(SEE PAGE 4-24) ③
TO MA-232 BOARD (2/3)
VCC (+5.1V)
VEE (-5.1V)
LINE IN (L)
LINE IN (R)
LINE OUT (L)
LINE OUT (R)
L2 AU IN (L)
L2 AU IN (R)
AU GND
SW 12V
AN GND
MA-232 BOARD (1/3)
(SERVO/SYSTEM CONTROL)
T891
T881
1-423-413-11
FULL ERASE HEAD
CN891 3P 2.0 RED
FE HEAD
N.C.
GND (AU)
ACE HEAD
AUDIO REC/PB
AUDIO ERASE
CN881 4P 2.0 WHT
REC A HEAD (X)
PB A HEAD (Y)
GND (AU)
A ERASE HEAD
CHECK PIN
CN882 3P 2.5 WHT
GND
BIAS (-)
BIAS (+)
TO HF-34 BOARD CN102
(SEE PAGE 4-42)
CN901 11P 2.0 BL TO B
LINE IN (R)
GND (AU)
LINE IN (L)
AU GND
RF CONV IN
LEVEL VR VCC
NORM AU OUT
LEVEL VR (R)
LINE OUT (R)
LEVEL VR (L)
LINE OUT (L)
TO HF-34 BOARD CN101
(SEE PAGE 4-42)
CN902 11P 2.0 BL TO B
CLK
DATA
D GND
AF SWP
A MUTE
AF ENV
VCC OUT (+5.1V)
UNREG +VCC
GND (AU)
UNREG -VCC
VEE OUT (-5.1V)
Q236-239
BUFFER
TO KR-31 BOARD CN505
(SEE PAGE 4-63)
CN911 23P 1.25 FFC
KR ON
KR AU CONT
SO1
SCK1
KR LOWER
KR UPPER
NA PB
MIC DET
AMS
KR ECHO VR
KR MUTE
D GND
DSP PD
DSP SIAK
DSP SRDY
DSP SIRQ
DPS SCLK
DSP SO
VIB ON
MIC KEY CON
DSP AMS
DSP MIC DET
ASURA RESET
08
CN904 19P 1.25 FFC
L2 (R) IN
AU GND
L2 (L) IN
KR MUTE
CO SEL
D GND
MIC CONT
D 6V
D 6V
L2 (V) IN
AN GND
KR ECHO
NT PB SW
PAL RF AOC
SCL
SDA
SIRCS OUT
S CLK
SO BUS
CN905 19P 1.25 FFC
SI BUS
ASURA RESET
ASURA CS
TUNER V
CO CS
V SYNC
N.C
H DET
F MONO
SMD
STEREO or BG/DK
SAP LED
SIRCS IN
PLL CLOCK
PLL DATA
PLL ENABLE
TA MUTE
TO HI-17 BOARD CN303
(SEE PAGE 4-48)
TO HI-17 BOARD CN304
(SEE PAGE 4-48)

ROL), DC-62 (RELAY) SCHEMATIC DIAGRAM
K872PS MODEL)

) series, DC-62 BOARD : 3,000 series —



4
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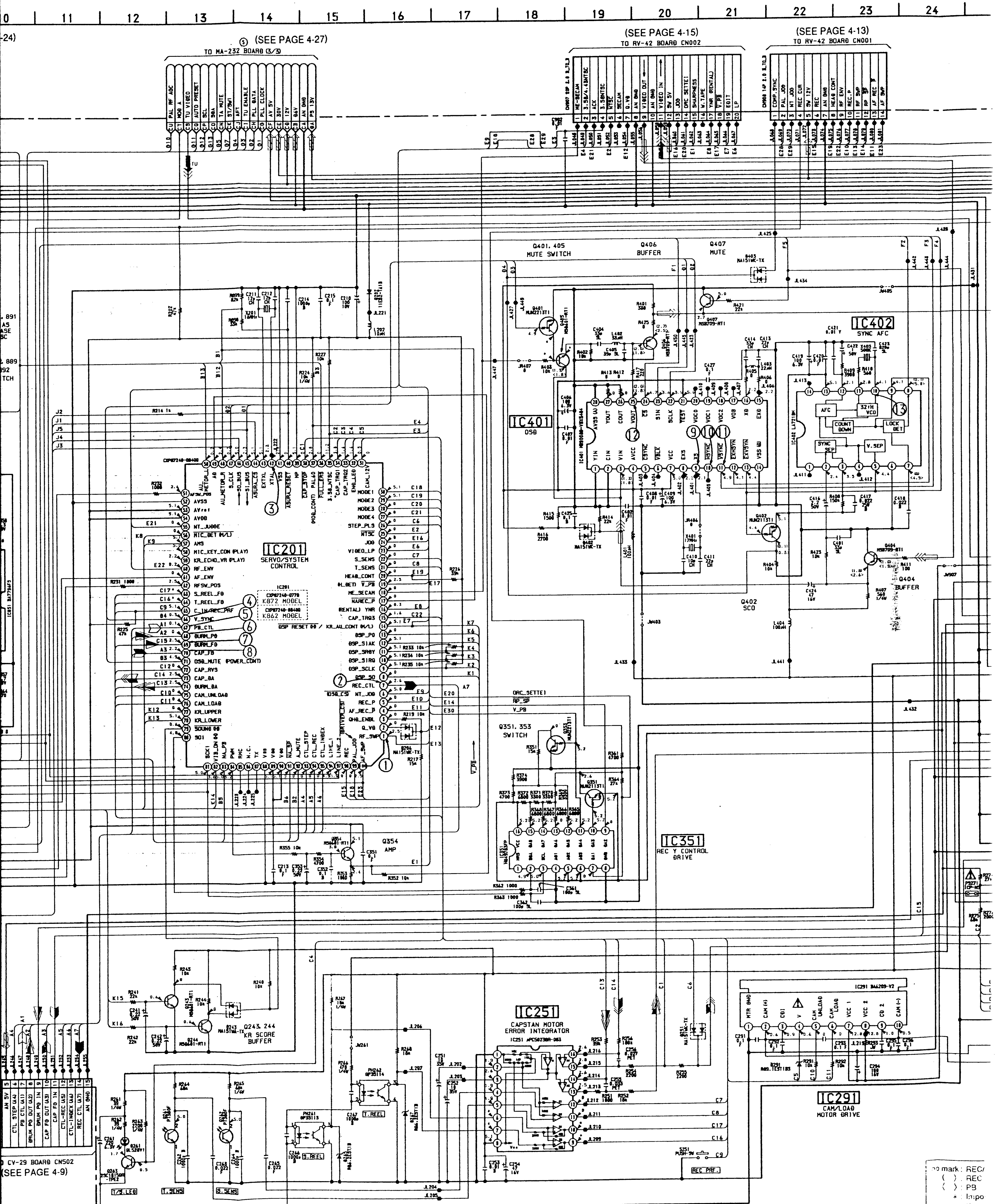
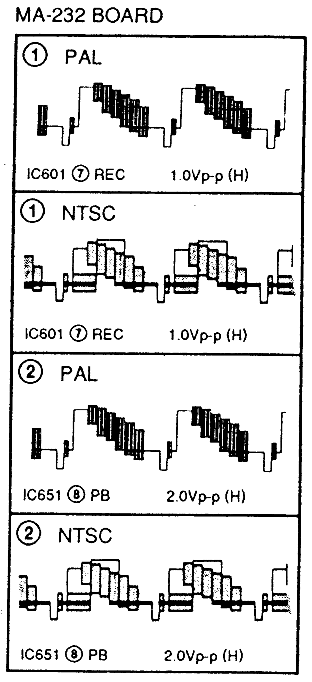
14
15
16
17
18
19
20
(SEE PAGE 4-24) ①
TO MA-232 BOARD (2/3)
(SEE PAGE 4-27) ②
TO MA-232 BOARD (3/3)
(SEE PAGE 4-24) ③
TO MA-232 BOARD (2/3)
④ (SEE PAGE 4-24)
TO MA-232 BOARD (2/3)
⑤ (SEE PAGE 4-27)
TO MA-232 BOARD (3/3)
(SEE PAGE 4-15)
TO RV-42 BOARD CN002
-232 BOARD (1/3)
VO/SYSTEM CONTROL)
Q881, 891
BIAS
ERASE
OSC
Q882, 889
Q892
SWITCH
IC851
REC/PB AMP
SWITCH
Q236-239
BUFFER
IC201
SERVO/SYSTEM
CONTROL
K872 MODEL
K862 MODEL
Q401, 405
MUTE SWITCH
Q406
BUFFER
IC401
OSD
Q351, 353
SWITCH
IC351
REC Y CONTROL
DRIVE
Q354
AMP
Q243, 244
KR SCORE
BUFFER
IC251
CAPSTAN MOTOR
ERROR INTEGRATOR
Q263
LED DRIVE
Q261
TAPE TOP
SENSOR
Q262
TAPE END
SENSOR
Q261
TAP TOP/END
LED
TO HI-17 BOARD CN303
(SEE PAGE 4-48)
TO HI-17 BOARD CN304
(SEE PAGE 4-48)
TO CV-29 BOARD CN502
(SEE PAGE 4-9)


(SEE PAGE 4-27)
TO MA-232 BOARD (3/3)
(SEE PAGE 4-15)
TO RV-42 BOARD CN002
(SEE PAGE 4-13)
TO RV-42 BOARD CN001
Q401, 405
MUTE SWITCH
Q406
BUFFER
Q407
MUTE
IC402
SYNC AFC
IC401
OSD
IC201
SERVO/SYSTEM
CONTROL
K872 MODEL
K862 MODEL
Q402
SCO
Q404
BUFFER
Q351, 353
SWITCH
Q354
AMP
IC351
REC Y CONTROL
DRIVE
Q243, 244
KR SCORE
BUFFER
IC251
CAPSTAN MOTOR
ERROR INTEGRATOR
IC291
CAM/LOAD
MOTOR DRIVE
CV-29 BOARD CN502
(SEE PAGE 4-9)
Q263
LED DRIVE
Q261
TAPE TOP
SENSOR
Q262
TAPE END
SENSOR
Q261
TAP TOP/END
LED
REC PRF.
no mark : REC/
( ) : REC
⟨ ⟩ : PB
Impo
the
mark

MA-232 (INPUT/OUTPUT) SCHEMATIC DIAGRAM
(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

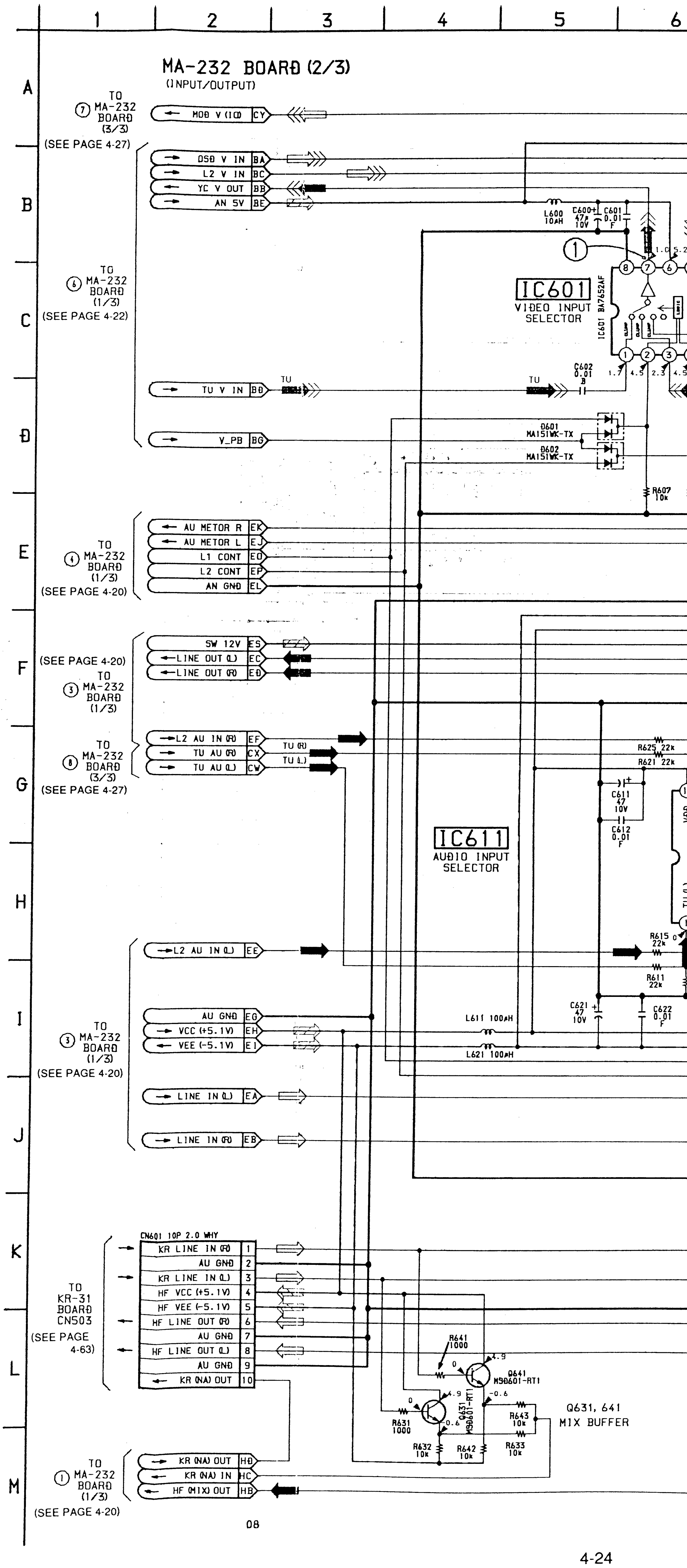
— Ref. No. MA-232 BOARD : 1,000 series —

• Refer to page 4-16 for Printed Wiring B

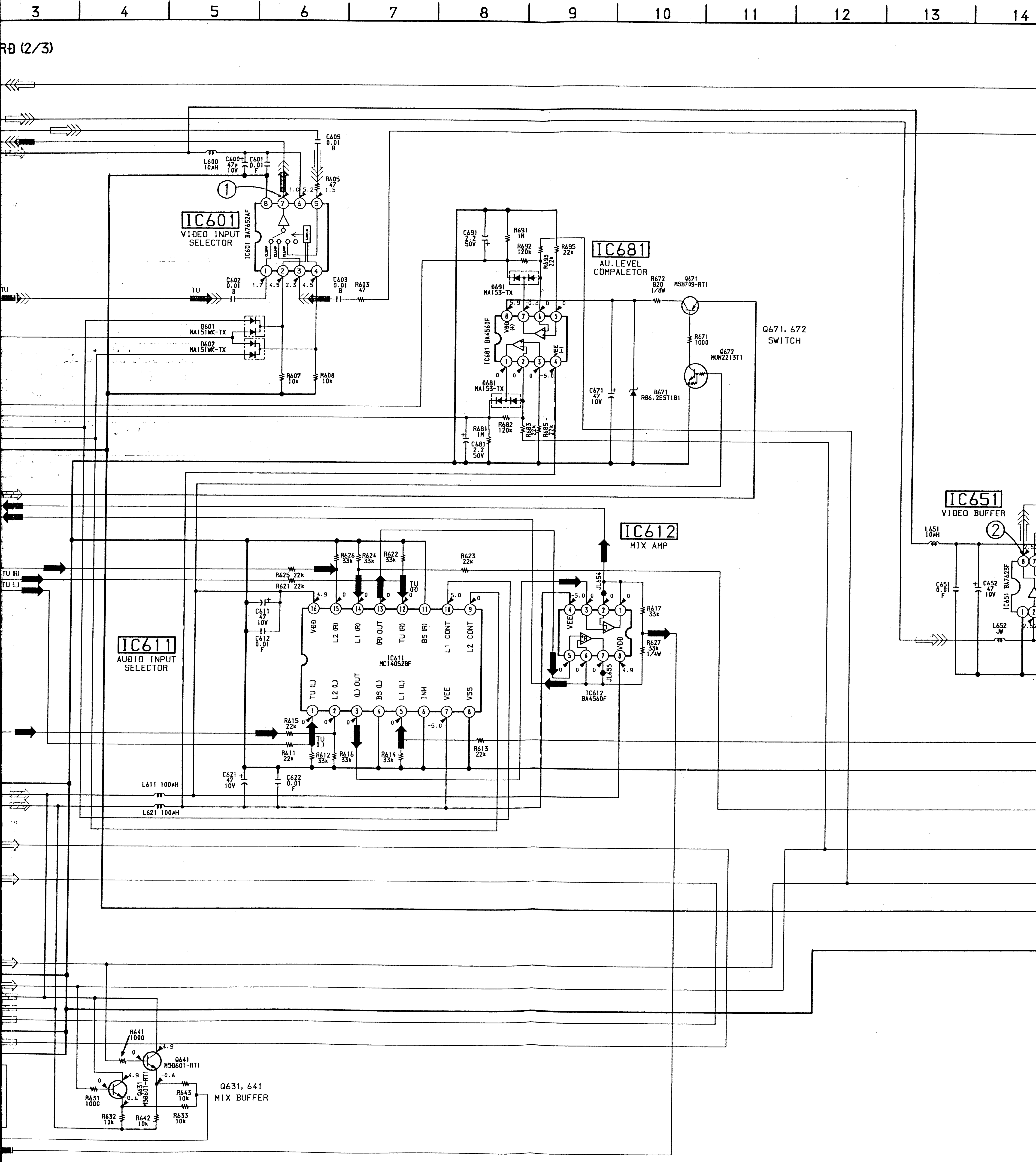


• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
MA-232 BOARD (2/3)
(INPUT/OUTPUT)
TO ⑦ MA-232 BOARD (3/3)
(SEE PAGE 4-27)
MOD V (IO) CY
OSD V IN BA
L2 V IN BC
YC V OUT BB
AN 5V BE
TO ⑥ MA-232 BOARD (1/3)
(SEE PAGE 4-22)
TU V IN BD
V_PB BG
TU
L600 10μH
C600 47μ 10V
C601 0.01 F
IC601
VIDEO INPUT SELECTOR
IC601 BA7652AF
C602 0.01 B
D601 MA151WK-TX
D602 MA151WK-TX
R607 10k
TO ④ MA-232 BOARD (1/3)
(SEE PAGE 4-20)
AU METOR R EK
AU METOR L EJ
L1 CONT EO
L2 CONT EP
AN GND EL
(SEE PAGE 4-20)
TO ③ MA-232 BOARD (1/3)
SW 12V ES
LINE OUT (L) EC
LINE OUT (R) ED
TO ⑧ MA-232 BOARD (3/3)
(SEE PAGE 4-27)
L2 AU IN (R) EF
TU AU (R) CX
TU AU (L) CW
TU (R)
TU (L)
R625 22k
R621 22k
C611 47 10V
C612 0.01 F
IC611
AUDIO INPUT SELECTOR
R615 22k
R611 22k
L2 AU IN (L) EE
C621 47 10V
C622 0.01 F
L611 100μH
L621 100μH
TO ③ MA-232 BOARD (1/3)
(SEE PAGE 4-20)
AU GND EG
VCC (+5.1V) EH
VEE (-5.1V) EI
LINE IN (L) EA
LINE IN (R) EB
CN601 10P 2.0 WHY
KR LINE IN (R) 1
AU GND 2
KR LINE IN (L) 3
HF VCC (+5.1V) 4
HF VEE (-5.1V) 5
HF LINE OUT (R) 6
AU GND 7
HF LINE OUT (L) 8
AU GND 9
KR (NA) OUT 10
TO KR-31 BOARD CN503
(SEE PAGE 4-63)
R641 1000
Q641 N9D601-RT1
Q631 N9D601-RT1
R631 1000
R643 10k
R632 10k
R642 10k
R633 10k
Q631, 641
MIX BUFFER
TO ① MA-232 BOARD (1/3)
(SEE PAGE 4-20)
KR (NA) OUT HD
KR (NA) IN HC
HF (MIX) OUT HB
08

ATIC DIAGRAM
372PS MODEL) **• Refer to page 4-16 for Printed Wiring Board.**
eries —


3
4
5
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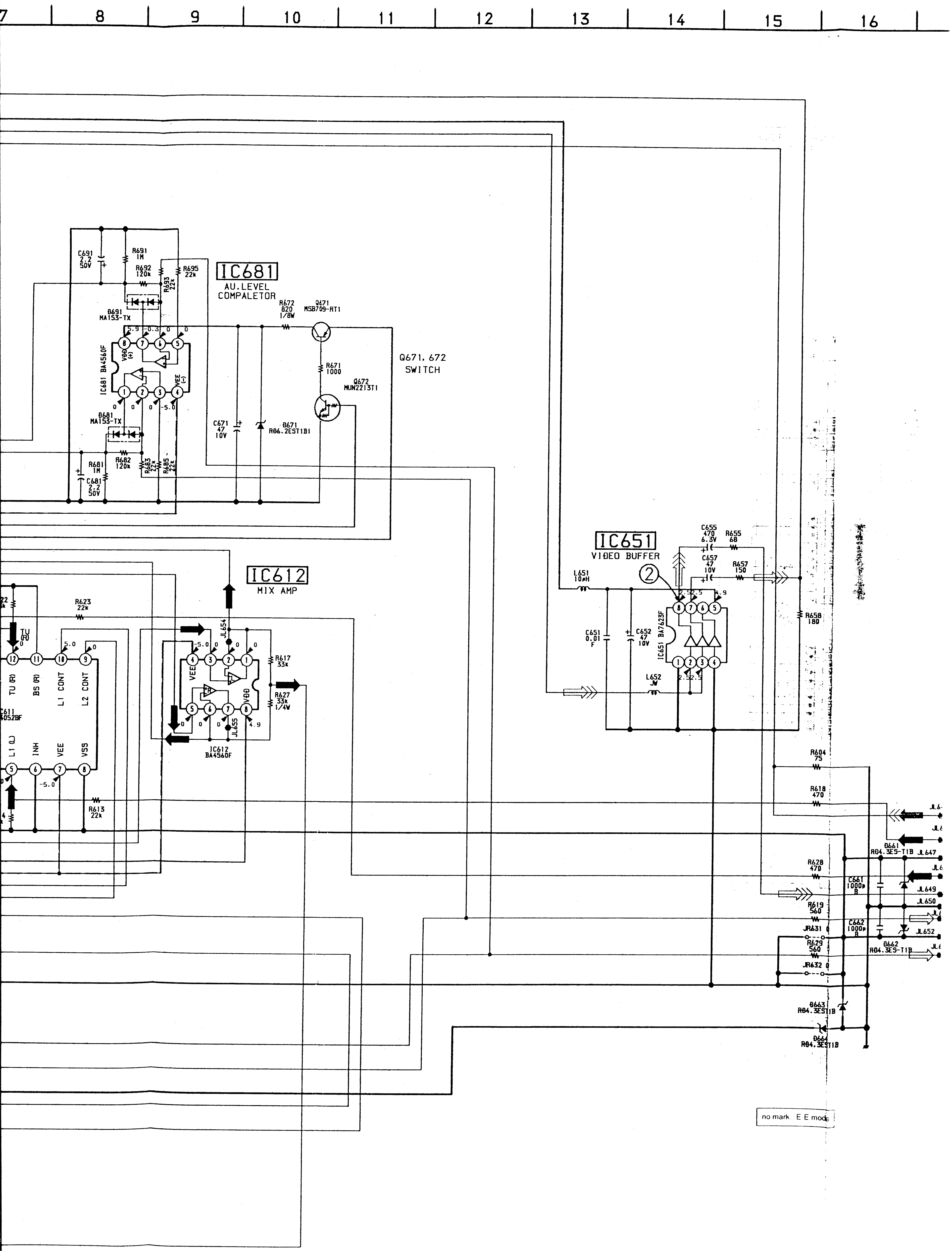
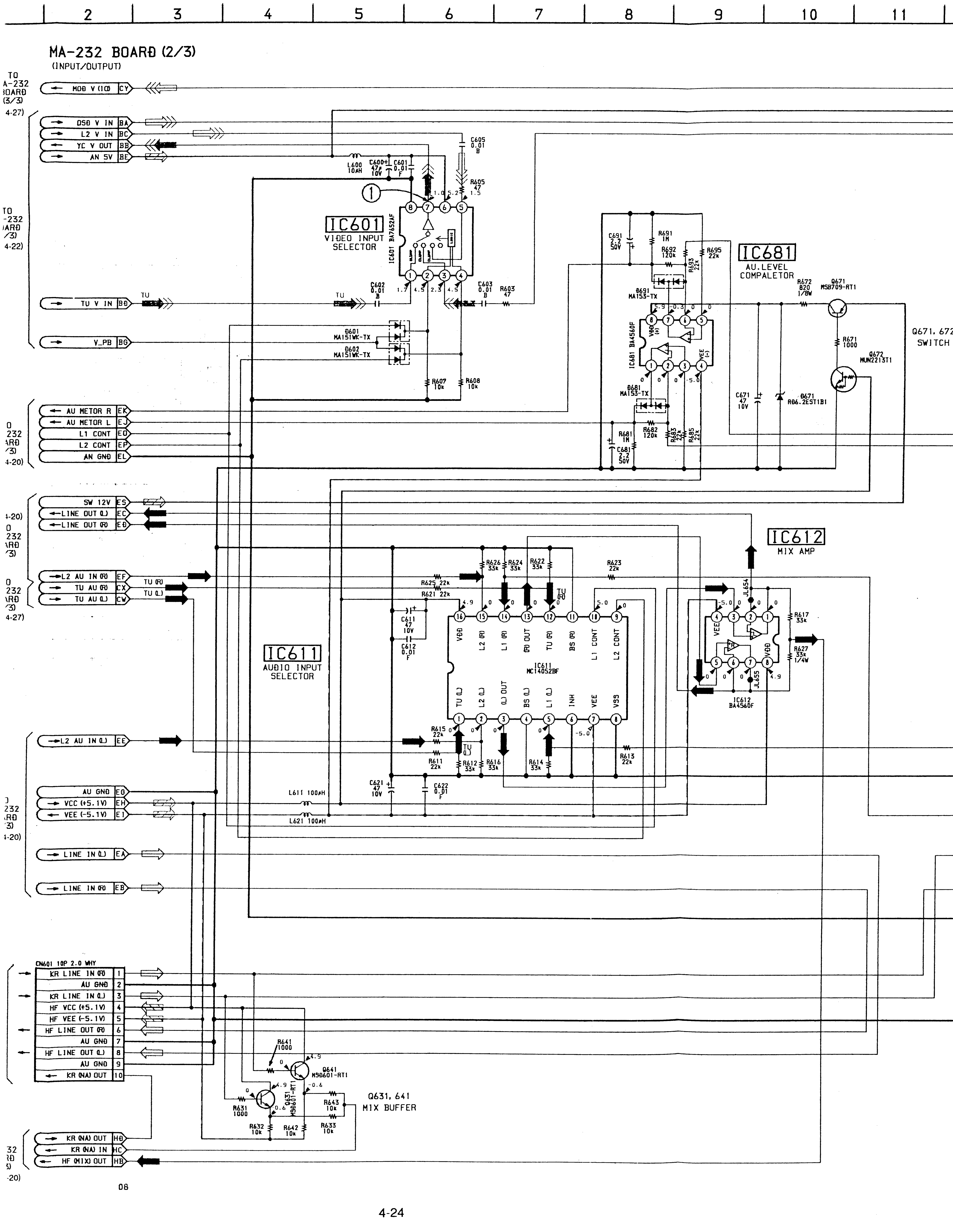
7
8
9
10
11
12
13
14
RD (2/3)
IC601
VIDEO INPUT SELECTOR
IC601 BA7652AF
L600 10µH
C600 47µ 10V
C601 0.01 F
C605 0.01 B
R605 47
①
C602 0.01 B
C603 0.01 B
R603 47
TU
D601 MA151WK-TX
D602 MA151WK-TX
R607 10k
R608 10k
IC681
AU.LEVEL COMPALETOR
IC681 BA4560F
C691 2.2 50V
R691 1M
R692 120k
R693 22k
R695 22k
D691 MA153-TX
D681 MA153-TX
R681 1M
C681 2.2 50V
R682 120k
R683 22k
R685 22k
R672 820 1/8W
Q671 MSB709-RT1
R671 1000
Q672 MUN2213T1
C671 47 10V
D671 RD6.2ESTIB1
Q671, 672 SWITCH
IC651
VIDEO BUFFER
②
L651 10µH
C651 0.01 F
C652 47 10V
IC651 BA7623F
L652 JW
IC612
MIX AMP
JL654
JL655
R617 33k
R627 33k 1/4W
IC612 BA4560F
VEE
VDD
IC611
AUDIO INPUT SELECTOR
IC611 MC14052BF
R626 33k
R624 33k
R622 33k
R623 22k
R625 22k
R621 22k
C611 47 10V
C612 0.01 F
VDD
L2 (R)
L1 (R)
(R) OUT
TU (R)
BS (R)
L1 CONT
L2 CONT
TU (L)
L2 (L)
(L) OUT
BS (L)
L1 (L)
INH
VEE
VSS
R615 22k
R611 22k
R612 33k
R616 33k
R614 33k
R613 22k
C621 47 10V
C622 0.01 F
L611 100µH
L621 100µH
TU (R)
TU (L)
R641 1000
Q641 MSB601-RT1
Q631 MSB601-RT1
R631 1000
R643 10k
R632 10k
R642 10k
R633 10k
Q631, 641 MIX BUFFER


7
8
9
10
11
12
13
14
15
16
IC681
AU.LEVEL
COMPALETOR
C691
2.2
50V
R691
1M
R692
120k
R693
22k
R695
22k
D691
MA153-TX
IC681 BA4560F
VDD
(+)
VEE
(-)
5.9
-0.3
0
0
0
0
0
-5.0
D681
MA153-TX
R681
1M
C681
2.2
50V
R682
120k
R683
22k
R685
22k
R672
820
1/8W
Q671
MSB709-RT1
R671
1000
Q672
MUN2213T1
Q671, 672
SWITCH
C671
47
10V
D671
RD6.2ESTIBI
IC612
MIX AMP
R623
22k
TU
(R)
TU (R)
BS (R)
L1 CONT
L2 CONT
L1 (L)
INH
VEE
VSS
5.0
-5.0
IC611
4052BF
R613
22k
JL654
JL655
VEE
VDD
-5.0
4.9
R617
33k
R627
33k
1/4W
IC612
BA4560F
IC651
VIDEO BUFFER
②
L651
10μH
C651
0.01
F
C652
47
10V
IC651 BA7623F
2.5
2.5
4.9
L652
JW
C655
470
6.3V
R655
68
C657
47
10V
R657
150
R658
180
R604
75
R618
470
R628
470
C661
1000p
B
R619
560
JR631 0
C662
1000p
B
R629
560
JR632 0
D661
RD4.3ES-T1B
D662
RD4.3ES-T1B
D663
RD4.3ESTIB
D664
RD4.3ESTIB
JL647
JL649
JL650
JL652
no mark E E mode

INPUT/OUTPUT) SCHEMATIC DIAGRAM
2CH/K862PS/K872MN/K872PS MODEL) • **Refer to page 4-16 for Printed Wiring Board.**
. MA-232 BOARD : 1,000 series —



2
3
4
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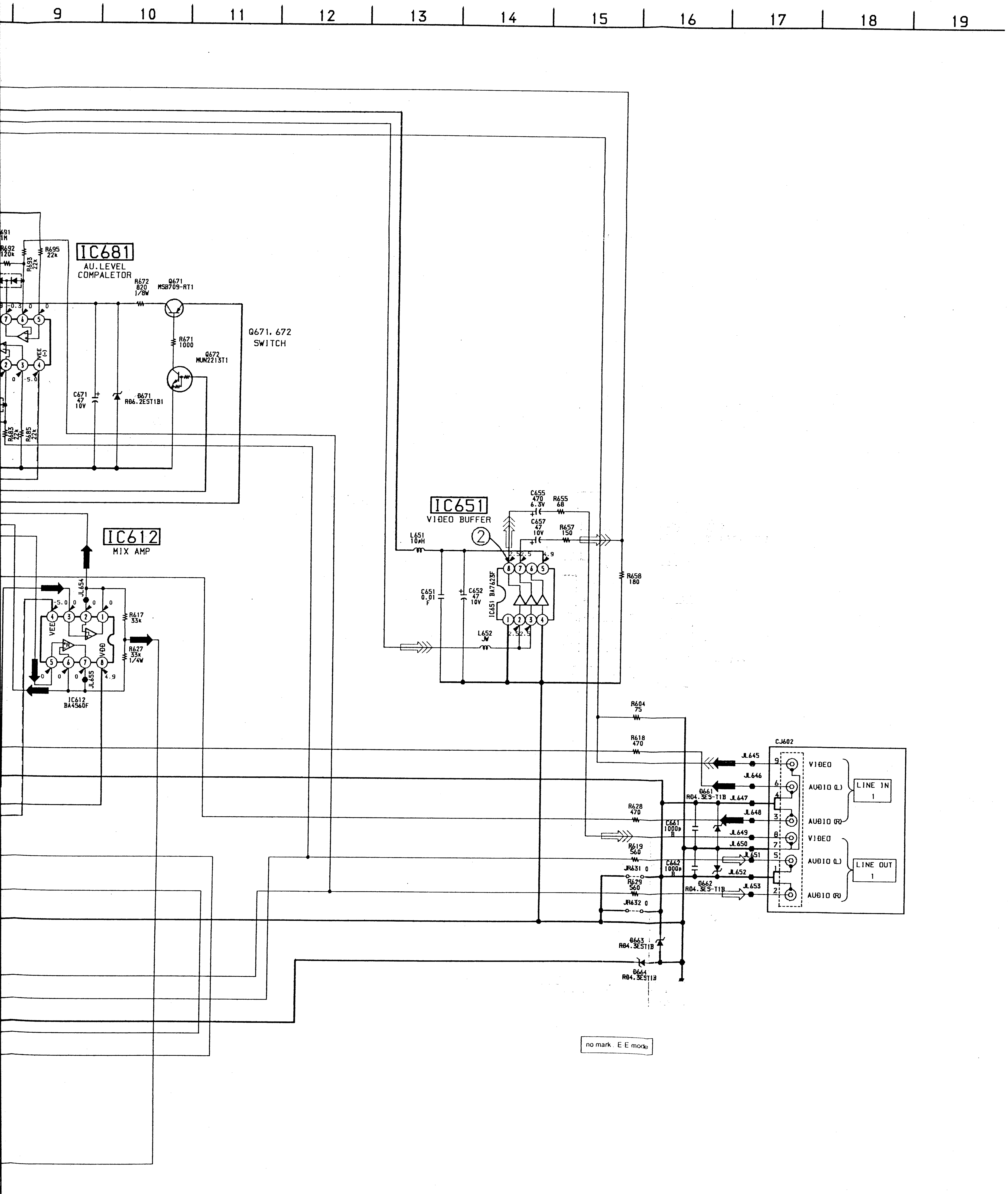
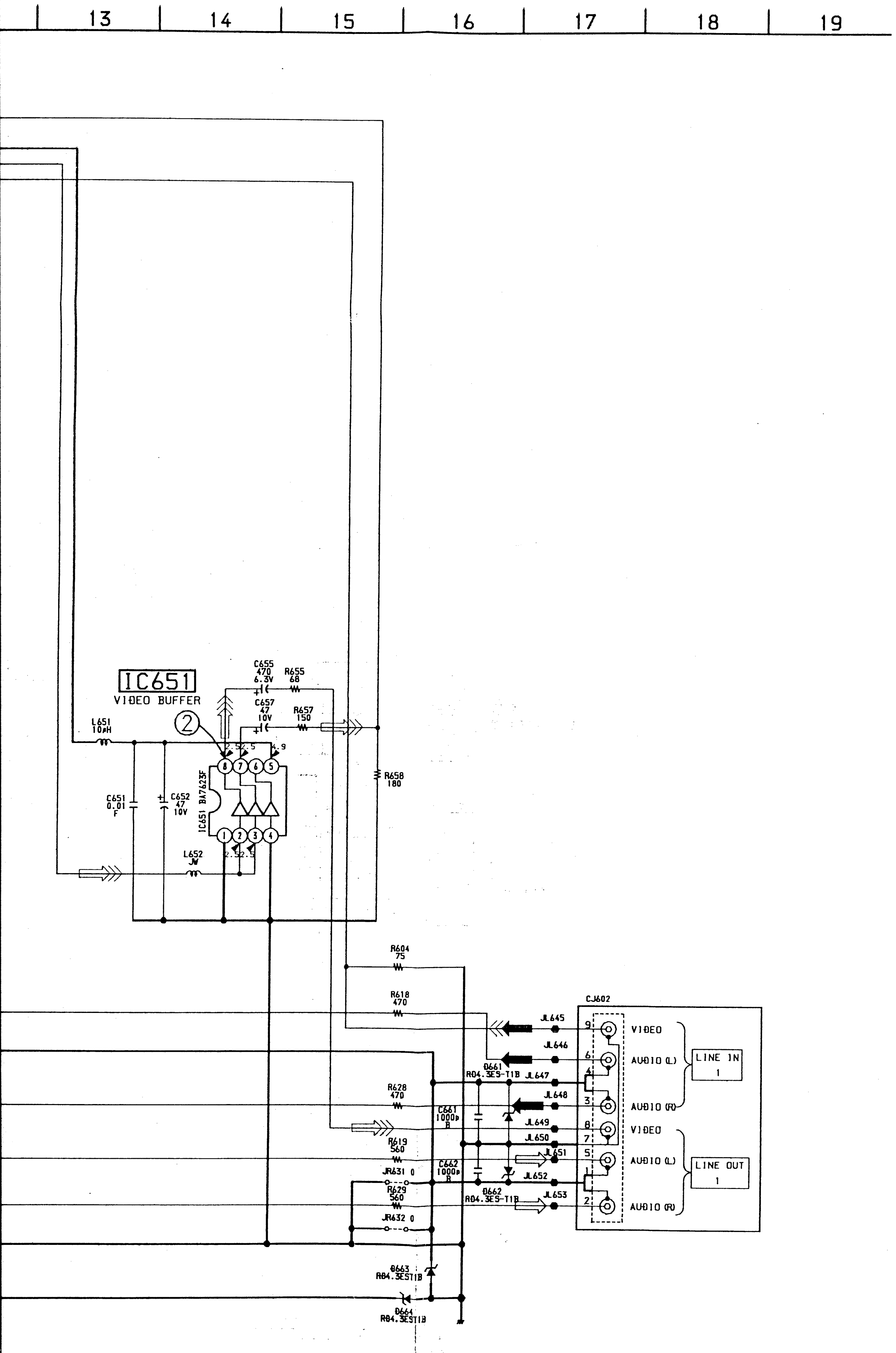
7
8
9
10
11
MA-232 BOARD (2/3)
(INPUT/OUTPUT)
MOB V (IC)
DSB V IN
L2 V IN
YC V OUT
AN 5V
TU V IN
V_PB
AU METOR R
AU METOR L
L1 CONT
L2 CONT
AN GND
SW 12V
LINE OUT (L)
LINE OUT (R)
L2 AU IN (R)
TU AU (R)
TU AU (L)
L2 AU IN (L)
AU GND
VCC (+5.1V)
VEE (-5.1V)
LINE IN (L)
LINE IN (R)
IC601
VIDEO INPUT SELECTOR
IC601 BA7652AF
IC681
AU.LEVEL COMPALETOR
IC681 BA4560F
Q671 MSB709-RT1
Q672 MUN2213T1
Q671, 672 SWITCH
D671 RD6.2ESTIB1
IC611
AUDIO INPUT SELECTOR
IC611 MC14052BF
IC612
MIX AMP
IC612 BA4560F
CN601 10P 2.0 WHY
KR LINE IN (R)
AU GND
KR LINE IN (L)
HF VCC (+5.1V)
HF VEE (-5.1V)
HF LINE OUT (R)
AU GND
HF LINE OUT (L)
AU GND
KR (NA) OUT
Q641 MSD601-RT1
Q631 MSD601-RT1
Q631, 641 MIX BUFFER
KR (NA) OUT
KR (NA) IN
HF (MIX) OUT
08


9
10
11
12
13
14
15
16
17
18
19
IC681
AU.LEVEL
COMPALETOR
R691 1M
R692 120k
R695 22k
R693 22k
R672 820 1/8W
Q671 MSB709-RT1
R671 1000
Q672 MUN2213T1
Q671, 672
SWITCH
C671 47 10V
D671 R06.2EST1B1
R683 22k
R685 22k
VEE (-)
-0.3
0
-5.0
IC612
MIX AMP
JL654
JL655
VEE
VDD
R617 33k
R627 33k 1/4W
IC612
BA4560F
4.9
IC651
VIDEO BUFFER
②
L651 10μH
C651 0.01 F
C652 47 10V
IC651 BA7623F
L652 JW
C655 470 6.3V
R655 68
C657 47 10V
R657 150
R658 180
2.5
4.9
R604 75
R618 470
R628 470
R619 560
JR631 0
R629 560
JR632 0
C661 1000p B
C662 1000p B
D661 R04.3ES-T1B
D662 R04.3ES-T1B
D663 R04.3EST1B
D664 R04.3EST1B
CJ602
JL645
JL646
JL647
JL648
JL649
JL650
JL651
JL652
JL653
VIDEO
AUDIO (L)
AUDIO (R)
LINE IN 1
LINE OUT 1

no mark : E E mode

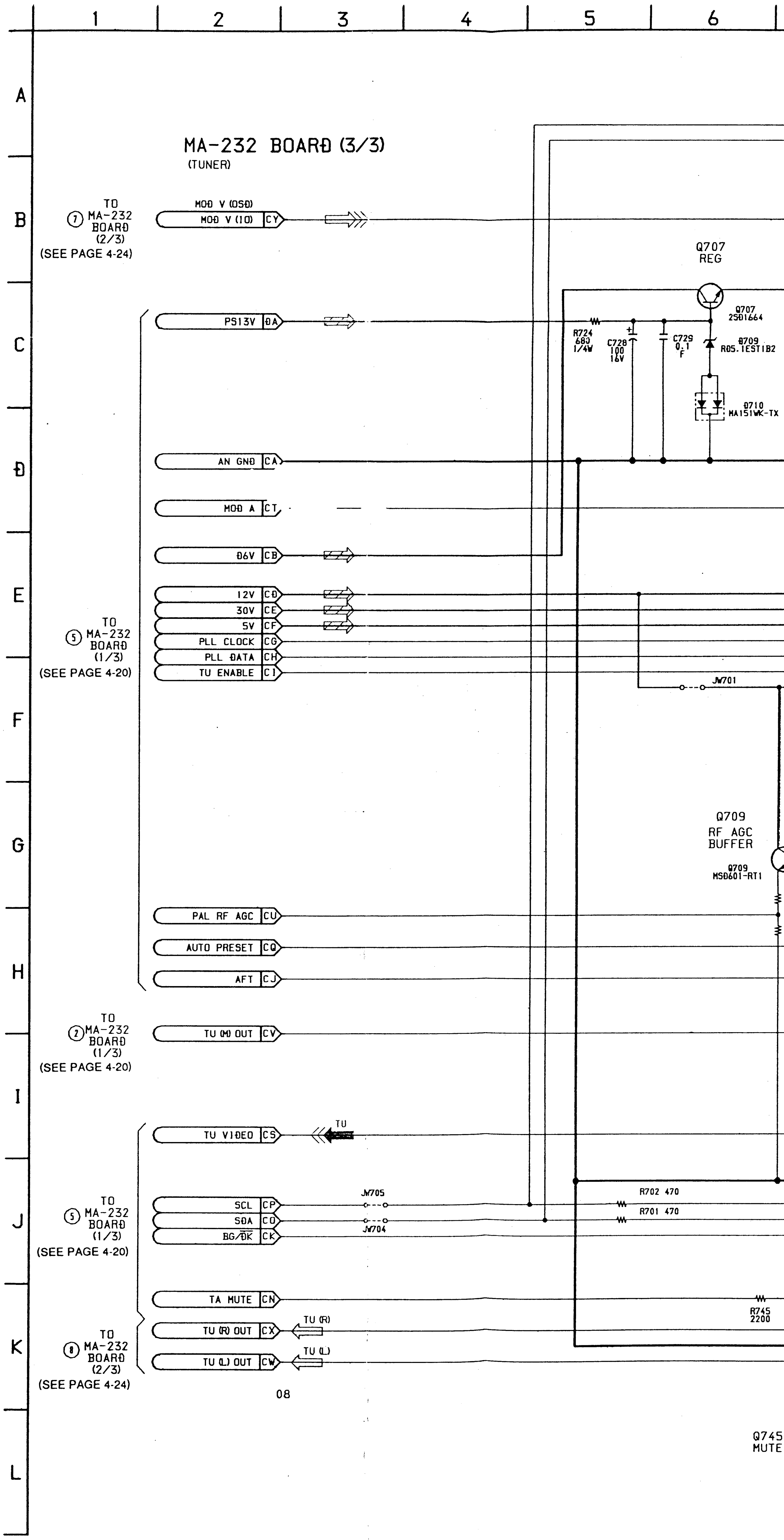

13
14
15
16
17
18
19
IC651
VIDEO BUFFER
②
L651
10μH
C651
0.01
F
C652
47
10V
IC651 BA7623F
C655
470
6.3V
R655
68
C657
47
10V
R657
150
2.5
2.5
4.9
2.5
2.5
L652
JW
R658
180
R604
75
R618
470
CJ602
JL645
JL646
D661
R04.3ES-T1B
JL647
R628
470
JL648
C661
1000p
B
JL649
JL650
R619
560
JL651
JR631 0
C662
1000p
B
JL652
R629
560
D662
R04.3ES-T1B
JL653
JR632 0
D663
R04.3EST1B
D664
R04.3EST1B
9
6
4
3
8
7
5
1
2
VIDEO
AUDIO (L)
AUDIO (R)
LINE IN
1
VIDEO
AUDIO (L)
AUDIO (R)
LINE OUT
1

no mark : E E mode

MA-232 (TUNER) SCHEMATIC DIAGRAM
(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. MA-232 BOARD : 1,000 series —

• **Refer to page 4-16 for Printed Wiring Board.**


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
MA-232 BOARD (3/3)
(TUNER)
TO ⑦ MA-232 BOARD (2/3)
(SEE PAGE 4-24)
MOD V (OSD)
MOD V (IO) CY
PS13V DA
AN GND CA
MOD A CT
D6V CB
12V CD
30V CE
5V CF
PLL CLOCK CG
PLL DATA CH
TU ENABLE CI
TO ⑤ MA-232 BOARD (1/3)
(SEE PAGE 4-20)
PAL RF AGC CU
AUTO PRESET CQ
AFT CJ
TO ② MA-232 BOARD (1/3)
(SEE PAGE 4-20)
TU (M) OUT CV
TU VIDEO CS
TU
TO ⑤ MA-232 BOARD (1/3)
(SEE PAGE 4-20)
SCL CP
SDA CO
BG/DK CK
JW705
JW704
TA MUTE CN
TU (R) OUT CX
TU (R)
TU (L) OUT CW
TU (L)
TO ⑧ MA-232 BOARD (2/3)
(SEE PAGE 4-24)
08
Q707
REG
Q707
2SD1664
R724
680
1/4W
C728
100
16V
C729
0.1
F
D709
RD5.1ESB2
D710
MA151WK-TX
JW701
Q709
RF AGC
BUFFER
Q709
MSD601-RT1
R702 470
R701 470
R745
2200
Q745
MUTE

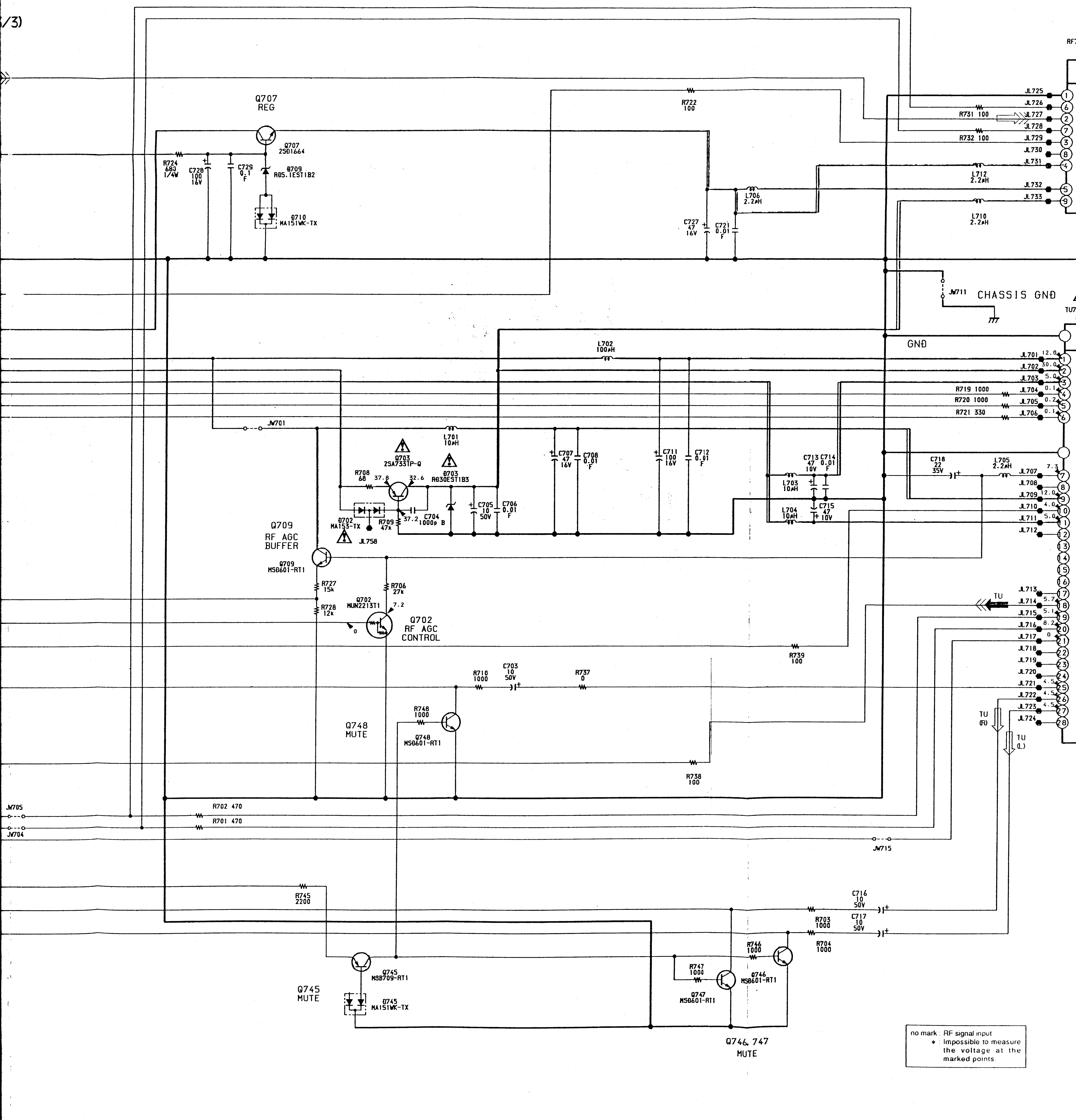
• Signal path

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡》	➡
PB			⇨》	⇨

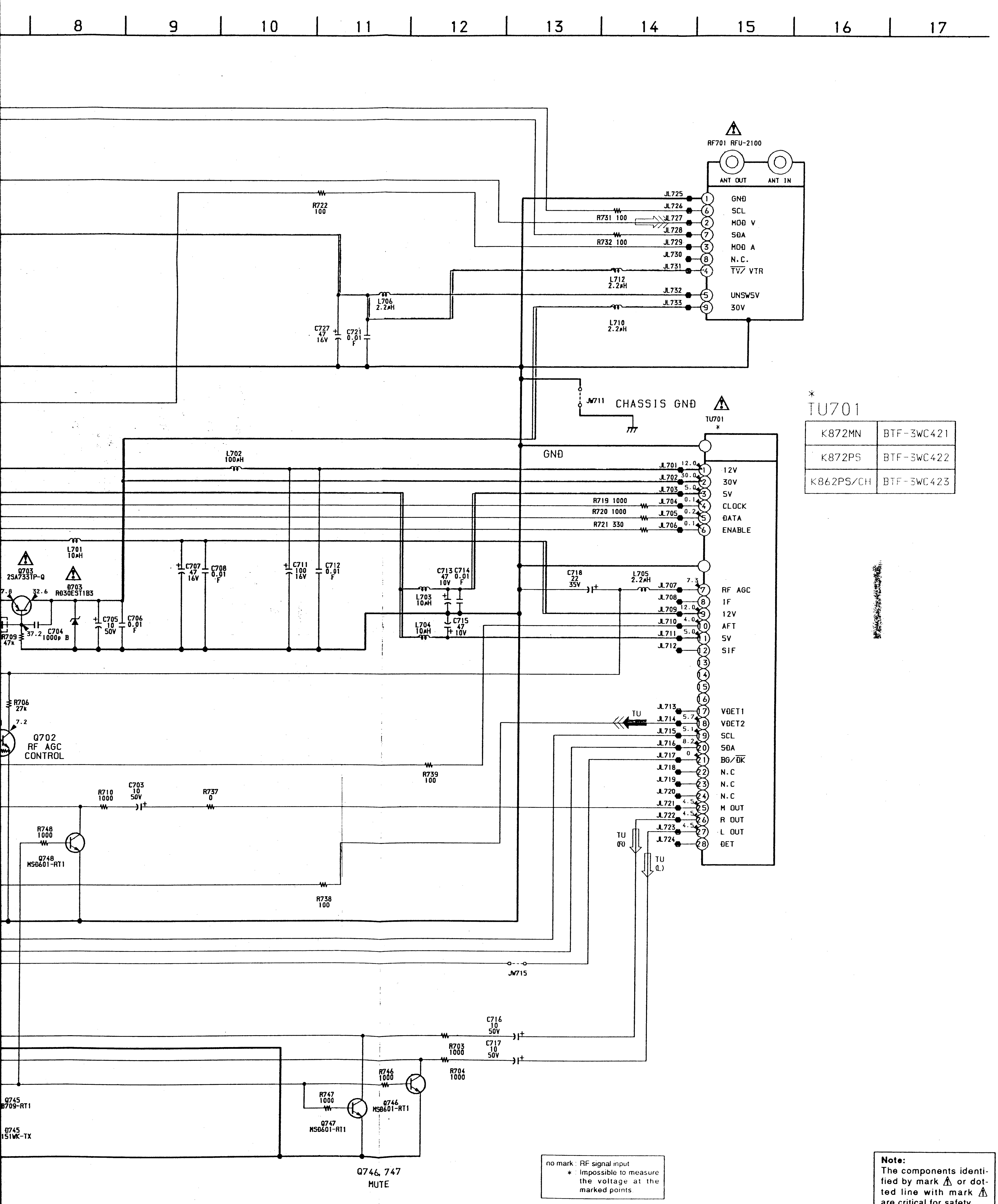
MODEL) • Refer to page 4-16 for Printed Wiring Board.

4	5	6	7	8	9	10	11	12	13	14

/3)


Q707
REG
Q707
2SD1664
R724
680
1/4W
C728
100
16V
C729
0.1
F
D709
RD5.1ESTIB2
D710
MA151WK-TX
R722
100
L706
2.2µH
C727
47
16V
C721
0.01
F
JL725
JL726
R731 100
JL727
JL728
R732 100
JL729
JL730
JL731
L712
2.2µH
JL732
JL733
L710
2.2µH
JW711
CHASSIS GND
GND
L702
100µH
JL701
JL702
JL703
JL704
JL705
JL706
R719 1000
R720 1000
R721 330
12.0
30.0
5.0
0.1
0.2
0.1
JW701
L701
10µH
Q703
2SA733P-Q
D703
RD30ESTIB3
R708
68
37.8
32.6
37.2
R709
47k
C704
1000p B
D702
MA153-TX
JL758
C705
10
50V
C706
0.01
F
C707
47
16V
C708
0.01
F
C711
100
16V
C712
0.01
F
C713
47
10V
C714
0.01
F
L703
10µH
L704
10µH
C715
47
10V
C718
22
35V
L705
2.2µH
JL707
JL708
JL709
JL710
JL711
JL712
7.3
12.0
4.0
5.0
Q709
RF AGC
BUFFER
Q709
MSD601-RT1
R727
15k
R728
12k
R706
27k
Q702
MUN2213T1
7.2
0
Q702
RF AGC
CONTROL
R739
100
JL713
JL714
JL715
JL716
JL717
JL718
JL719
JL720
JL721
JL722
JL723
JL724
5.7
5.1
8.2
0
4.5
4.5
4.5
TU
TU
(R)
TU
(L)
R710
1000
C703
10
50V
R737
0
R748
1000
Q748
MUTE
Q748
MSD601-RT1
R738
100
JW705
JW704
R702 470
R701 470
JW715
R745
2200
C716
10
50V
R703
1000
C717
10
50V
R704
1000
R746
1000
R747
1000
Q746
MSD601-RT1
Q747
MSD601-RT1
Q745
MSB709-RT1
D745
MA151WK-TX
Q745
MUTE
Q746, 747
MUTE
TU7
RF

no mark : RF signal input
* : Impossible to measure the voltage at the marked points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RF701 RFU-2100
ANT OUT
ANT IN
GND
SCL
MOD V
SDA
MOD A
N.C.
TV/ VTR
UNSW5V
30V
JL725
JL726
JL727
JL728
JL729
JL730
JL731
JL732
JL733
R722 100
R731 100
R732 100
L712 2.2μH
L706 2.2μH
L710 2.2μH
C727 47 16V
C721 0.01 F
JW711
CHASSIS GND
TU701 *
GND
L702 100μH
12V
30V
5V
CLOCK
DATA
ENABLE
R719 1000
R720 1000
R721 330
JL701
JL702
JL703
JL704
JL705
JL706
L701 10μH
Q703 2SA733TP-Q
D703 RD30ESTIB3
C707 47 16V
C708 0.01 F
C711 100 16V
C712 0.01 F
C713 47 10V
C714 0.01 F
C718 22 35V
L705 2.2μH
L703 10μH
L704 10μH
C715 47 10V
C705 10 50V
C706 0.01 F
C704 1000p B
R709 47k
RF AGC
IF
12V
AFT
5V
SIF
JL707
JL708
JL709
JL710
JL711
JL712
R706 27k
Q702 RF AGC CONTROL
VDET1
VDET2
SCL
SDA
BG/DK
N.C
N.C
N.C
M OUT
R OUT
L OUT
DET
JL713
JL714
JL715
JL716
JL717
JL718
JL719
JL720
JL721
JL722
JL723
JL724
TU
TU (R)
TU (L)
R739 100
R710 1000
C703 10 50V
R737 0
R748 1000
Q748 MSD601-RT1
R738 100
JW715
C716 10 50V
C717 10 50V
R703 1000
R704 1000
R746 1000
R747 1000
Q746 MSB601-RT1
Q747 MSD601-RT1
Q745 …B709-RT1
Q745 …151WK-TX
Q746, 747 MUTE

*
TU701

K872MN	BTF-3WC421
K872PS	BTF-3WC422
K862PS/CH	BTF-3WC423

no mark : RF signal input
* : Impossible to measure the voltage at the marked points

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

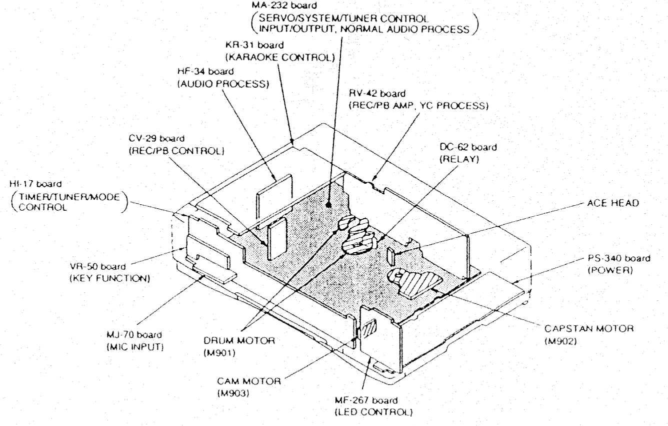
MA-242 (SERVO/SYSTEM CONTROL), DC-63 (RELAY) PRINTED WIRING BOARD (SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. MA-242 BOARD : 2,000 series, DC-63 BOARD : 3,000 series —

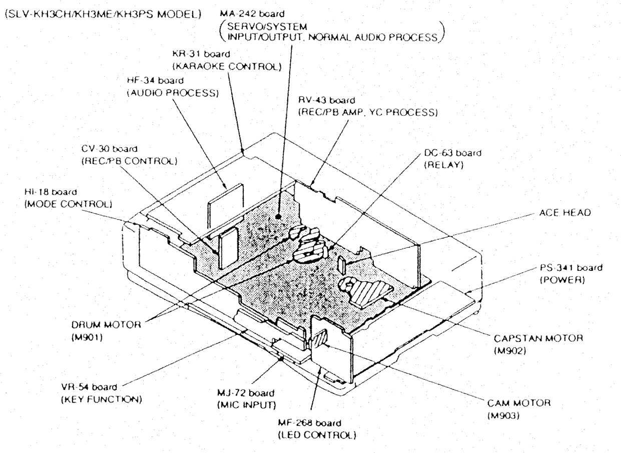
MA-242 BOARD

CN271	G-18	IC201	E-9
CN275	J-10	IC220	E-11
CN281	C-17	IC251	C-13
CN291	B-18	IC291	H-12
CN601	K-2	IC351	C-8
CN702	C-2	IC401	H-16
CN881	G-4	IC611	L-3
CN882	G-4	IC612	J-3
CN891	G-4	IC681	L-2
CN901	H-1	IC851	H-3
CN902	F-1		
CN904	A-2	Q236	D-6
CN905	A-3	Q237	D-5
CN906	D-4	Q238	E-6
CN907	L-14	Q239	E-6
CN908	L-10	Q243	D-8
CN910	D-19	Q244	D-8
CN911	D-3	Q245	K-10
		Q247	K-10
D202	F-13	Q248	K-10
D206	F-9	Q249	K-10
D243	D-8	Q261	E-19
D251	C-13	Q262	E-6
D261	D-12	Q263	A-13
D265	A-12	Q351	C-9
D267	B-14	Q353	B-8
D291	H-11	Q354	E-8
D403	I-17	Q355	B-8
D601	L-5	Q401	H-14
D602	L-4	Q404	I-15
D661	M-2	Q405	J-16
D662	M-4	Q431	J-15
D663	M-1	Q631	K-2
D664	J-1	Q641	K-2
D671	L-2	Q671	K-3
D681	L-1	Q672	K-3
D691	L-2	Q702	D-2
D704	J-17	Q703	C-2
D705	J-17	Q711	J-17
D841	K-18	Q881	J-5
D851	J-5	Q882	J-5
D854	I-3	Q889	J-4
D902	A-17	Q891	F-4
D904	F-2	Q892	H-5
D910	C-1		
D911	C-1		

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

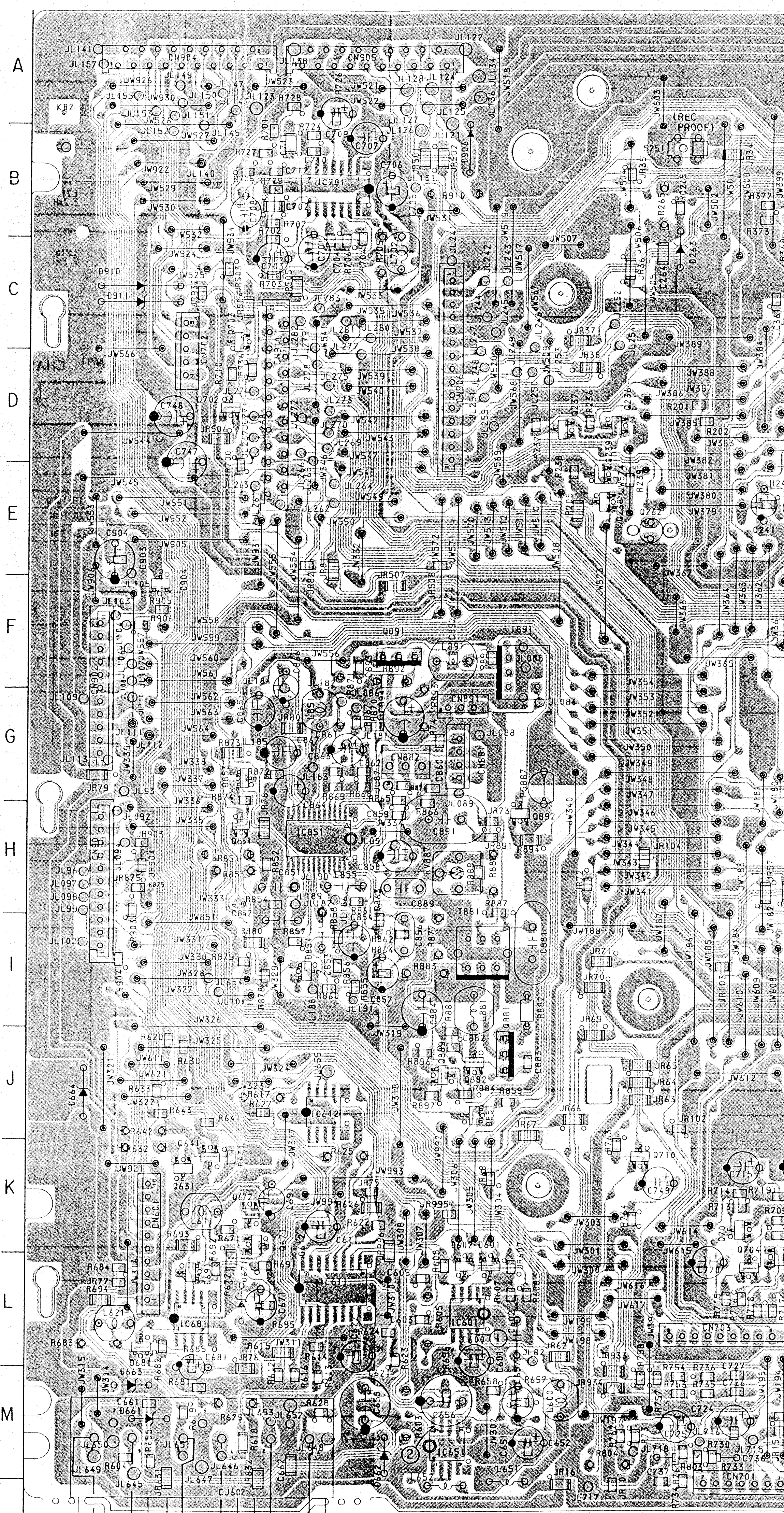

MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)

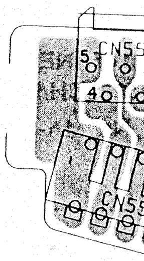

MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

There are few cases that the part isn't mounted in this model is printed on this diagram.

MA-242 BOARD

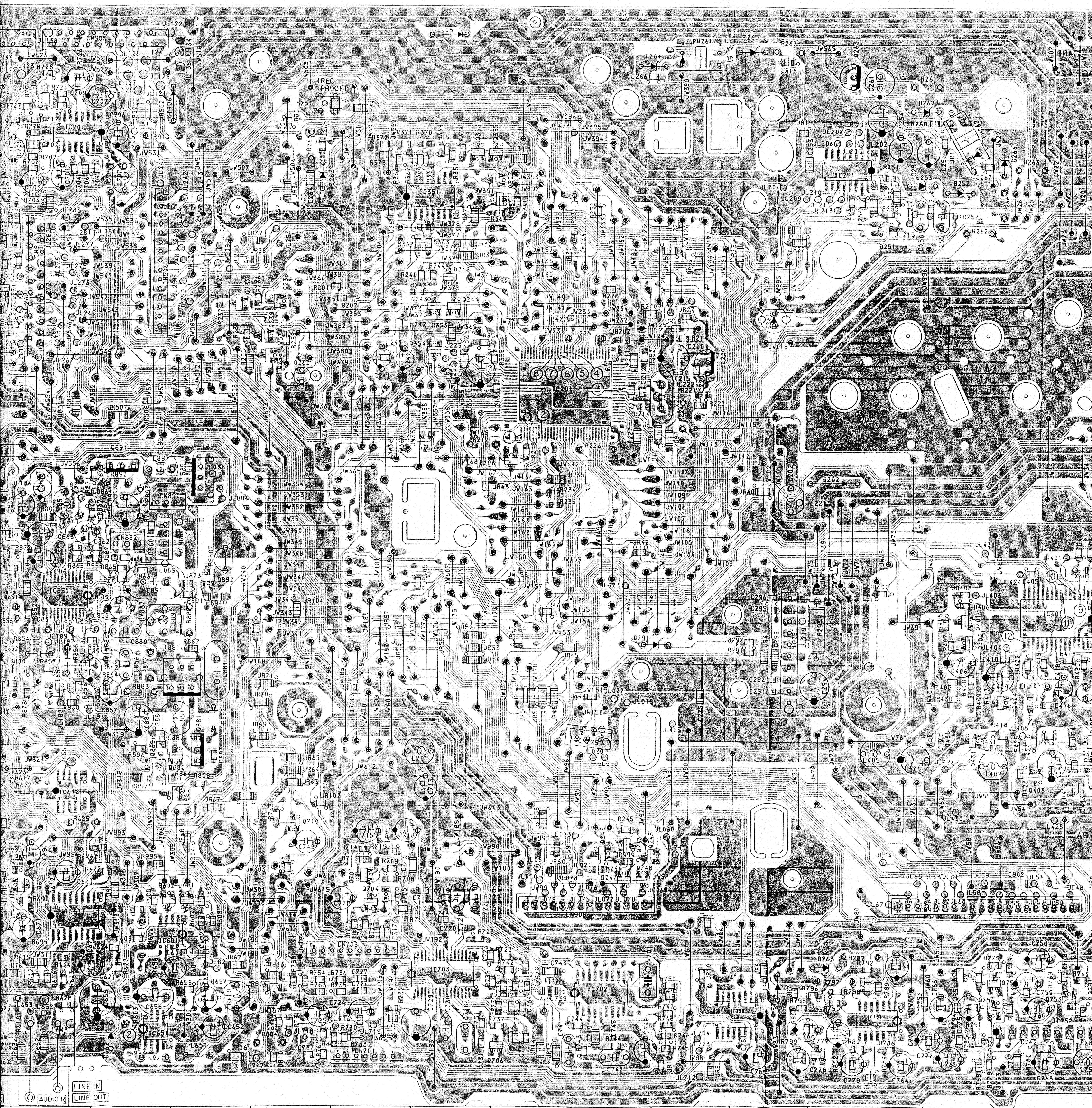

A
B
C
D
E
F
G
H
I
J
K
L
M
N
(REC PROOF)
VIDEO
AUDIO L
AUDIO R
LINE IN
LINE OUT
1
2
3
4
5
6
7

DC-6


CN5
CN5
08
I-6

M CONTROL), DC-63 (RELAY) PRINTED WIRING BOARD
3PS MODEL)

D : 2,000 series, DC-63 BOARD : 3,000 series —


JL122
CN905
D905
(REC PROOF)
PH261
IC351
IC251
IC701
IC851
IC642
IC651
IC703
IC702
CN701
CN901
CN882
CN908
LINE IN
LINE OUT
AUDIO R
3
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11
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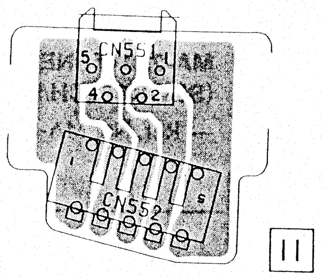
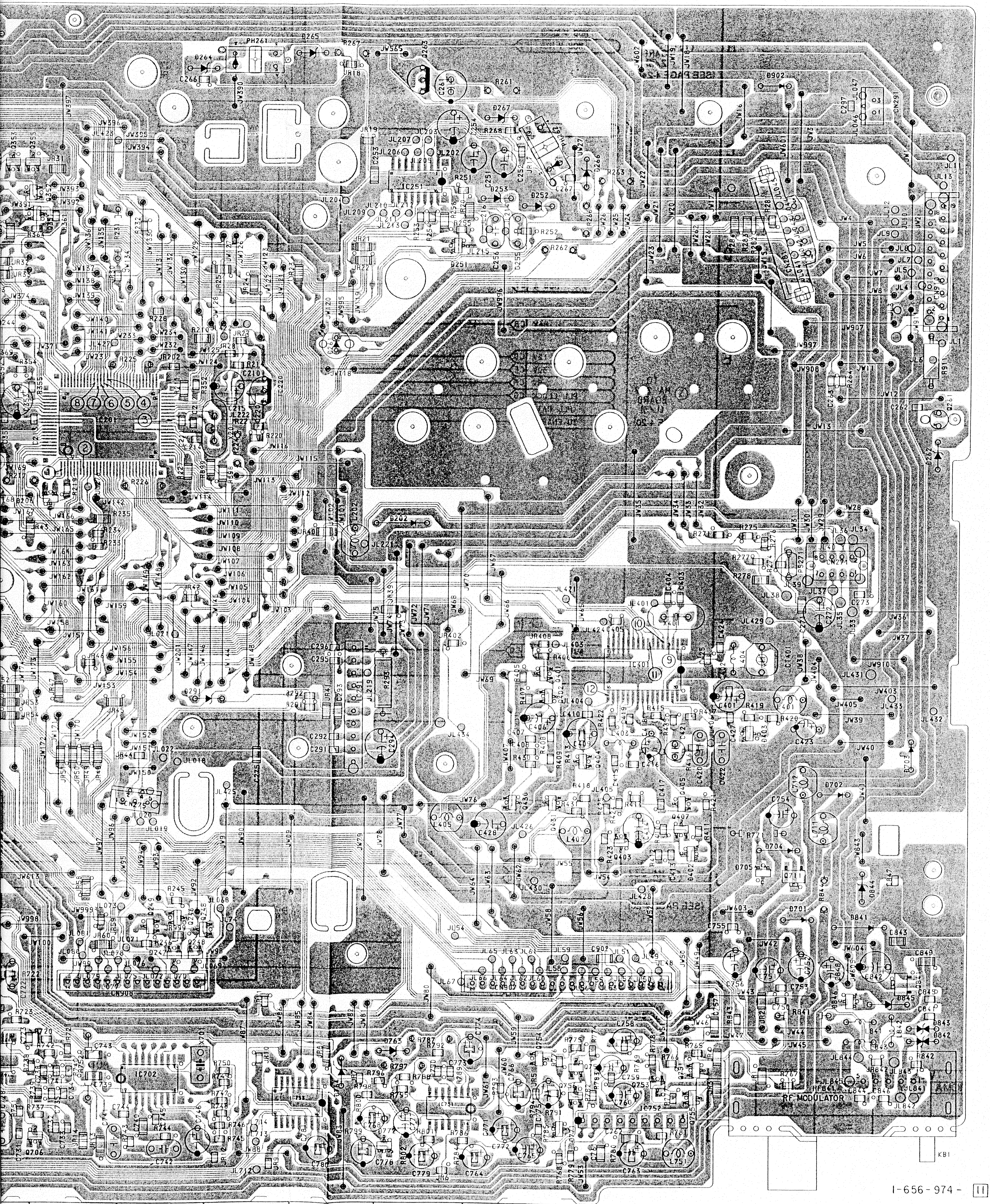
14
15

DC-63 BOARD


CN551
CN552
5
4
2
1

08

1-656-979- 11


IC702
RF MODULATOR
KB1
9
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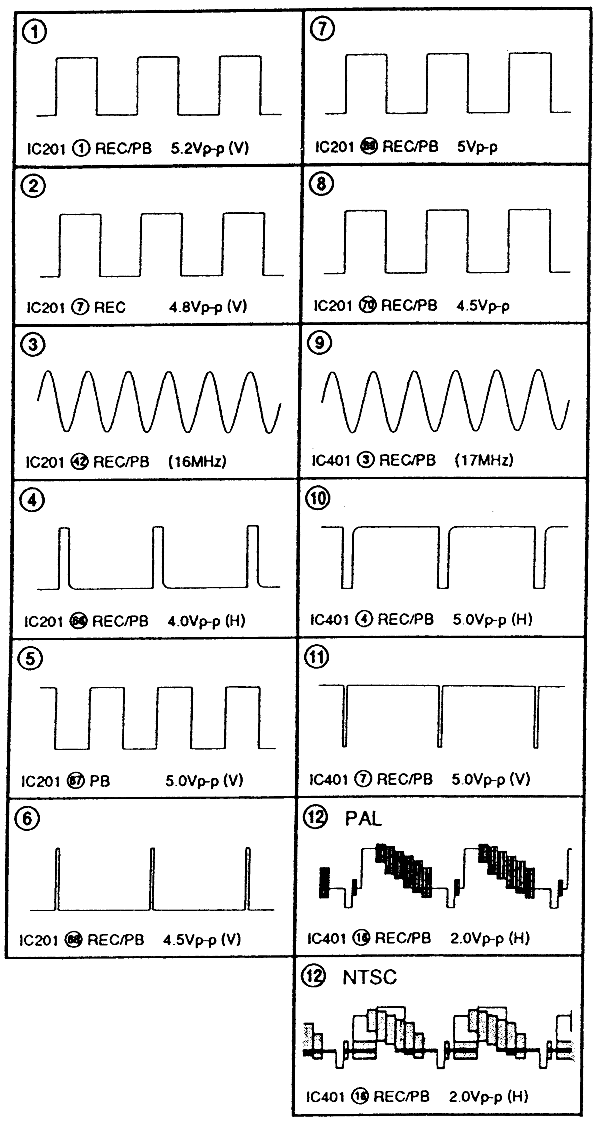
1-656-974- 11

MA-242 BOARD



• Signal path

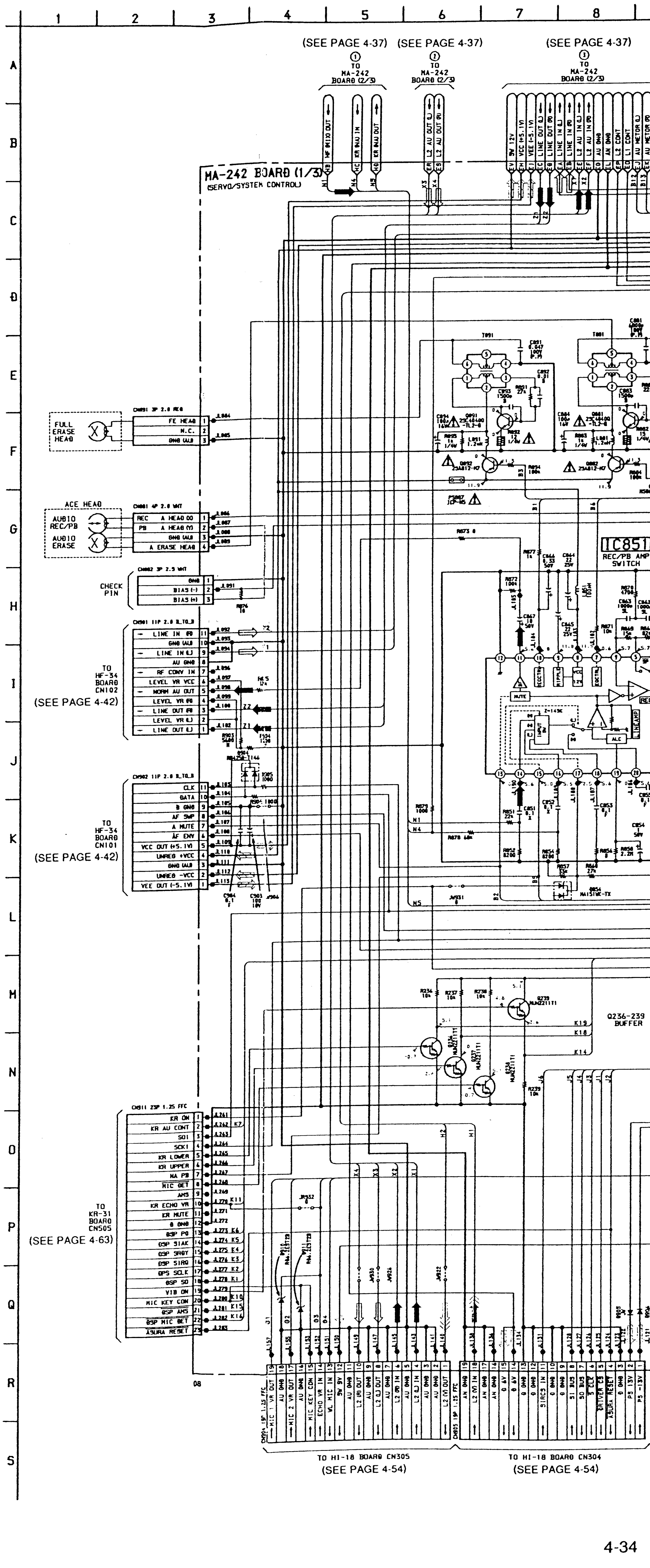
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

• Signal path

	REC	REC/PB	PB
Drum speed servo		→	
Drum phase servo		→	
Drum servo (speed and phase)		→	
Capstan speed servo		→	
Capstan servo (speed and phase)		→	
Ref. signal	➤		▷

MA-242 (SERVO/SYSTEM CONTROL), DC-63 (RELAY) SCHEMATIC DIAGRAM (SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. MA-242 BOARD : 2,000 series, DC-63 BOARD : 3,000 series —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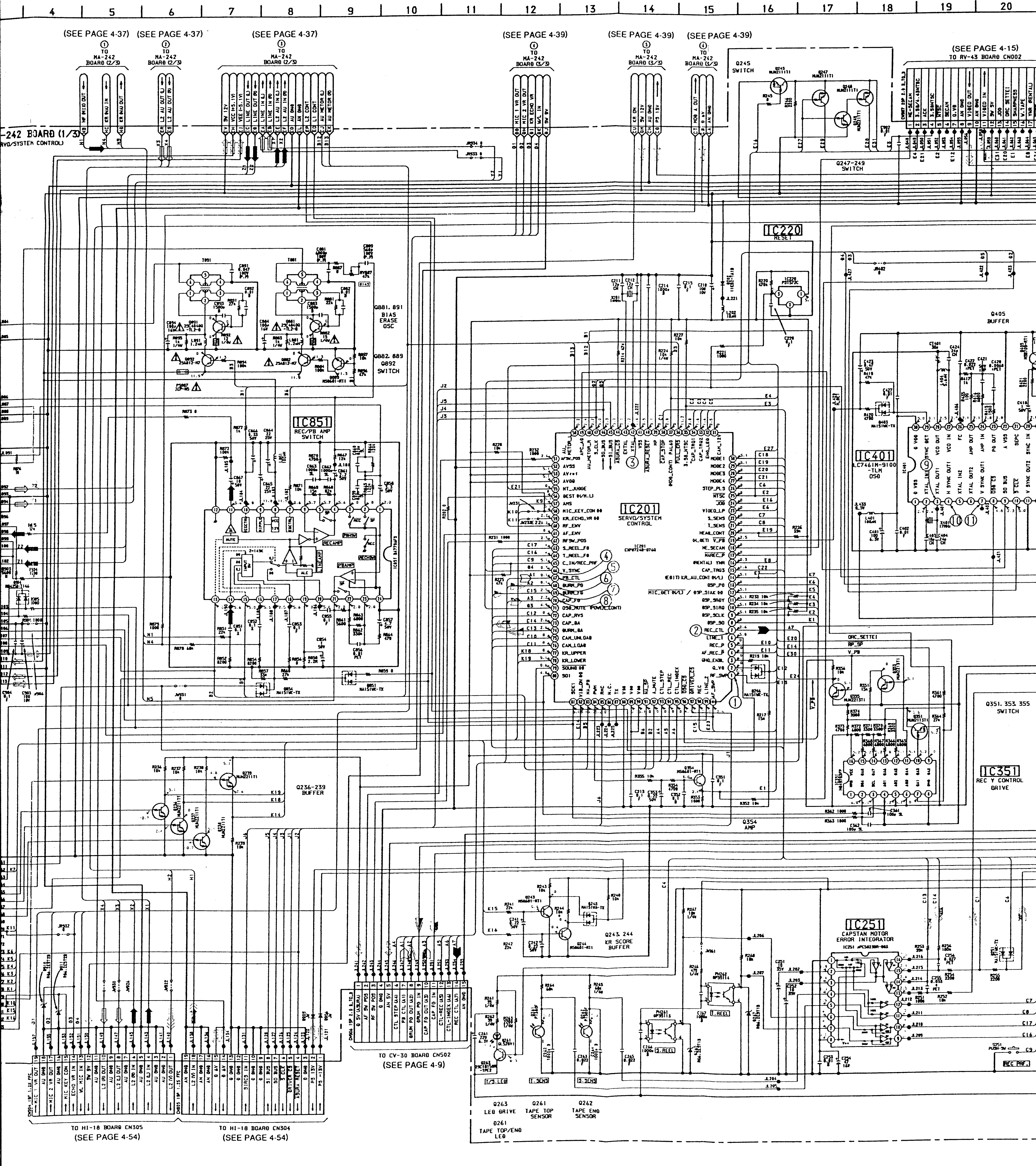
P
Q
R
S
(SEE PAGE 4-37)
(SEE PAGE 4-37)
(SEE PAGE 4-37)
TO MA-242 BOARD (2/3)
TO MA-242 BOARD (2/3)
TO MA-242 BOARD (2/3)
MA-242 BOARD (1/3)
(SERVO/SYSTEM CONTROL)
FULL ERASE HEAD
ACE HEAD
AUDIO REC/PB
AUDIO ERASE
CHECK PIN
TO HF-34 BOARD CN102
(SEE PAGE 4-42)
TO HF-34 BOARD CN101
(SEE PAGE 4-42)
TO KR-31 BOARD CN505
(SEE PAGE 4-63)
IC851
REC/PB AMP SWITCH
T851
T881
Q236-239 BUFFER
TO HI-18 BOARD CN305
(SEE PAGE 4-54)
TO HI-18 BOARD CN304
(SEE PAGE 4-54)

CONTROL), DC-63 (RELAY) SCHEMATIC DIAGRAM
S MODEL)

2,000 series, DC-63 BOARD : 3,000 series —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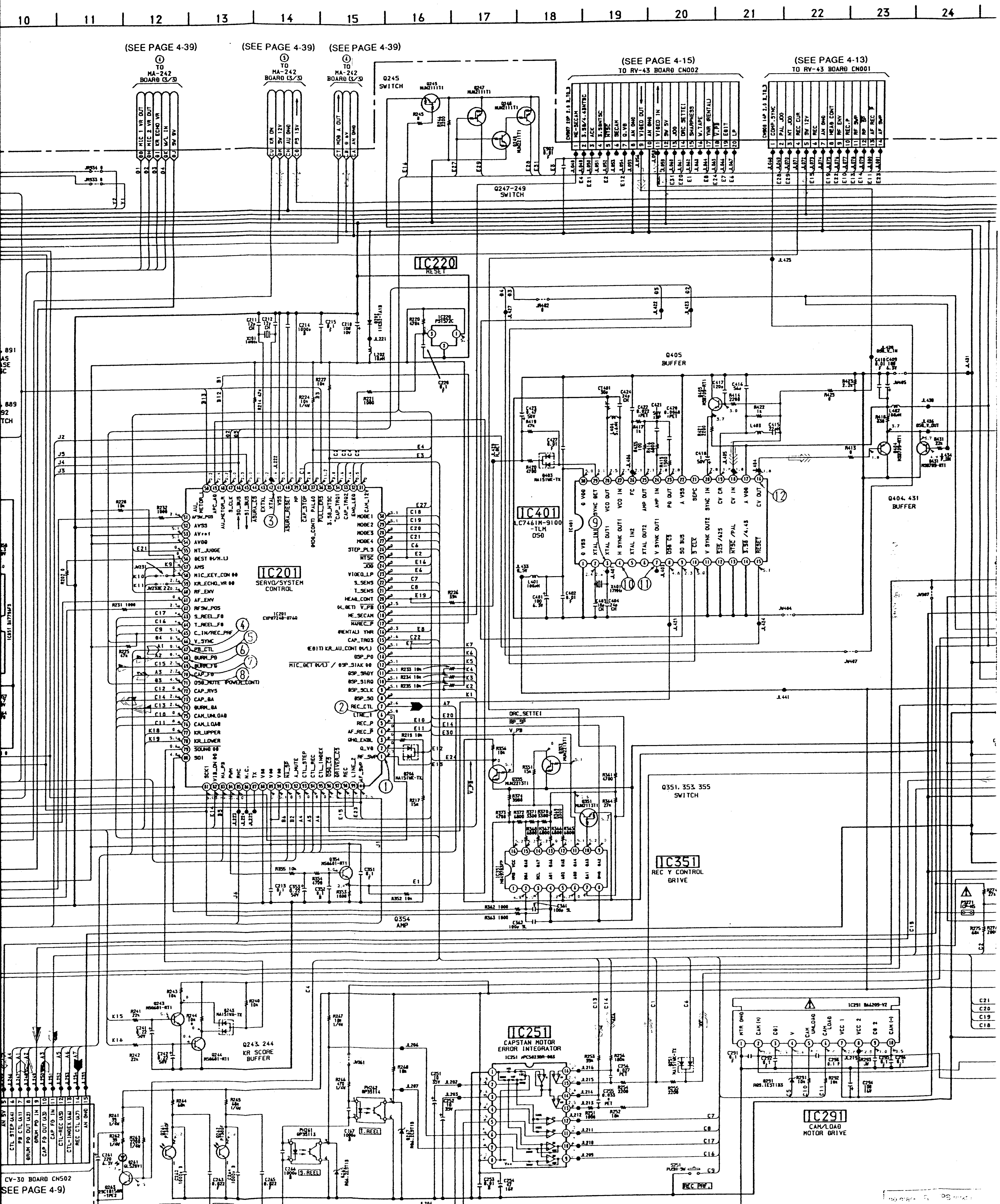
(SEE PAGE 4-37)
TO MA-242 BOARD (2/3)
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
(SEE PAGE 4-15)
TO RV-43 BOARD CN002
-242 BOARD (1/3)
Q245 SWITCH
Q247-249 SWITCH
IC220 RESET
Q881, 891 BIAS ERASE OSC
Q882, 889 Q892 SWITCH
IC851 REC/PB AMP SWITCH
IC201 SERVO/SYSTEM CONTROL
Q405 BUFFER
IC401 LC7461M-9100-TLM OSD
Q351, 353, 355 SWITCH
IC351 REC Y CONTROL DRIVE
Q236-239 BUFFER
Q354 AMP
Q243, 244 KR SCORE BUFFER
IC251 CAPSTAN MOTOR ERROR INTEGRATOR
TO CV-30 BOARD CN502
(SEE PAGE 4-9)
Q263 LED DRIVE
Q261 TAPE TOP SENSOR
Q262 TAPE END SENSOR
Q261 TAPE TOP/END LED
TO HI-18 BOARD CN305
(SEE PAGE 4-54)
TO HI-18 BOARD CN304
(SEE PAGE 4-54)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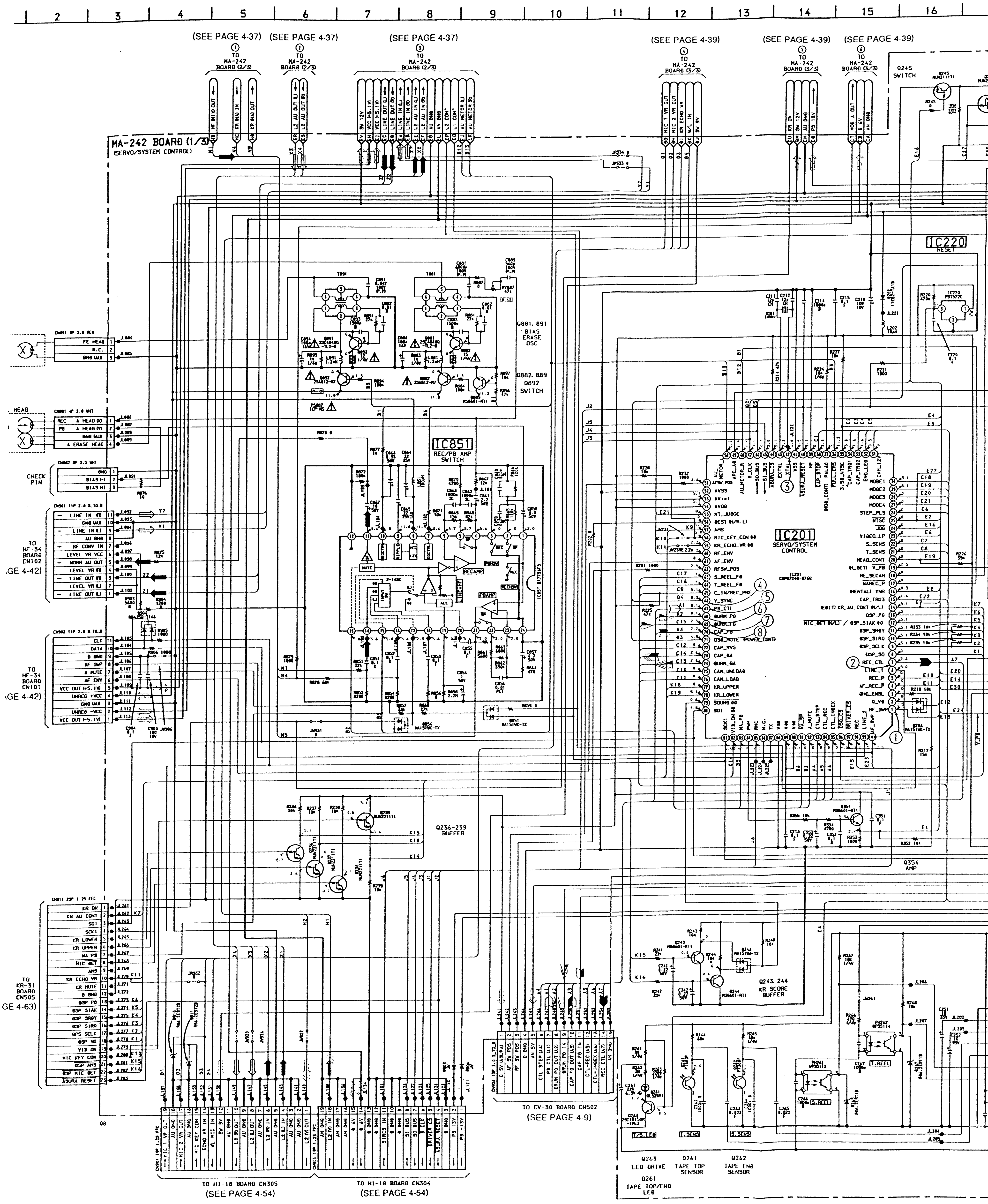
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
Q245 SWITCH
Q247-249 SWITCH
(SEE PAGE 4-15)
TO RV-43 BOARD CN002
(SEE PAGE 4-13)
TO RV-43 BOARD CN001
IC220 RESET
Q405 BUFFER
IC401 LC7461M-9100-TLM OSD
Q404, 431 BUFFER
IC201 SERVO/SYSTEM CONTROL
IC201 CXP87248-074Q
Q351, 353, 355 SWITCH
IC351 REC Y CONTROL DRIVE
Q354 AMP
Q243, 244 KR SCORE BUFFER
IC251 CAPSTAN MOTOR ERROR INTEGRATOR
IC251 μPC5428A-065
IC291 CAM/LOAD MOTOR DRIVE
IC291 BA6209-V2
T.REEL
S.REEL
REC PRF.
S251 PUSH-SW
T/S LED
T SENS
S SENS
Q263 LED DRIVE
Q261 TAPE TOP SENSOR
Q262 TAPE END SENSOR
Q261 TAPE TOP/END LED
CV-30 BOARD CN502
SEE PAGE 4-9)

(SERVO/SYSTEM CONTROL), DC-63 (RELAY) SCHEMATIC DIAGRAM
I3CH/KH3ME/KH3PS MODEL)

o. MA-242 BOARD : 2,000 series, DC-63 BOARD : 3,000 series —



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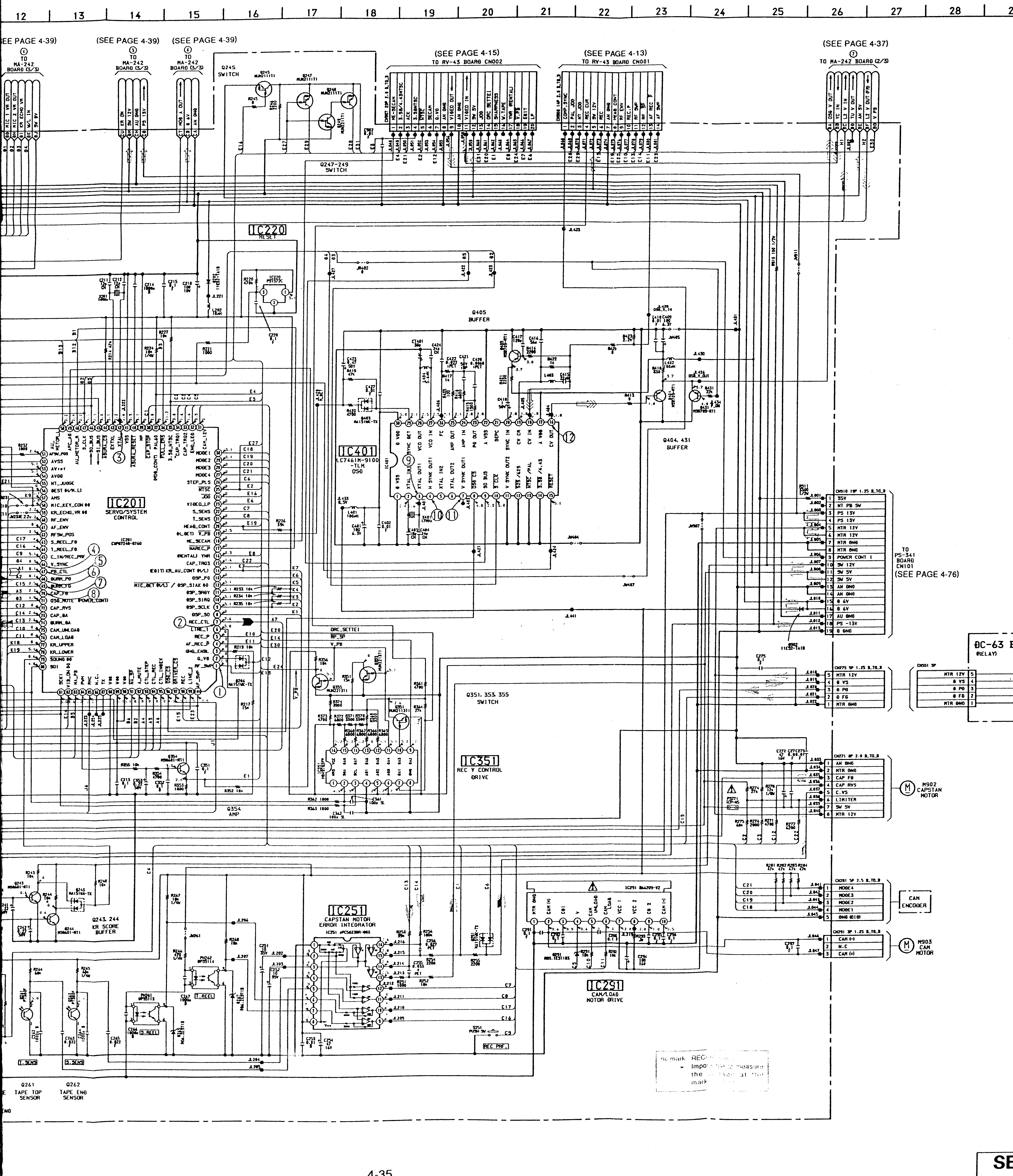
(SEE PAGE 4-37)
(SEE PAGE 4-37)
(SEE PAGE 4-37)
(SEE PAGE 4-39)
(SEE PAGE 4-39)
(SEE PAGE 4-39)
TO MA-242 BOARD (2/3)
TO MA-242 BOARD (3/3)
MA-242 BOARD (1/3)
(SERVO/SYSTEM CONTROL)
Q245 SWITCH
IC220 RESET
Q881, 891 BIAS ERASE OSC
Q882, 889 Q892 SWITCH
IC851 REC/PB AMP SWITCH
IC201 SERVO/SYSTEM CONTROL
CHECK PIN
TO HF-34 BOARD CN102
(SEE PAGE 4-42)
TO HF-34 BOARD CN101
(SEE PAGE 4-42)
Q236-239 BUFFER
Q354 AMP
Q243, 244 KR SCORE BUFFER
TO KR-31 BOARD CN505
(SEE PAGE 4-63)
TO CV-30 BOARD CN502
(SEE PAGE 4-9)
TO HI-18 BOARD CN305
(SEE PAGE 4-54)
TO HI-18 BOARD CN304
(SEE PAGE 4-54)
Q263 LED DRIVE
Q261 TAPE TOP SENSOR
Q262 TAPE END SENSOR
D261 TAPE TOP/END LED
HEAD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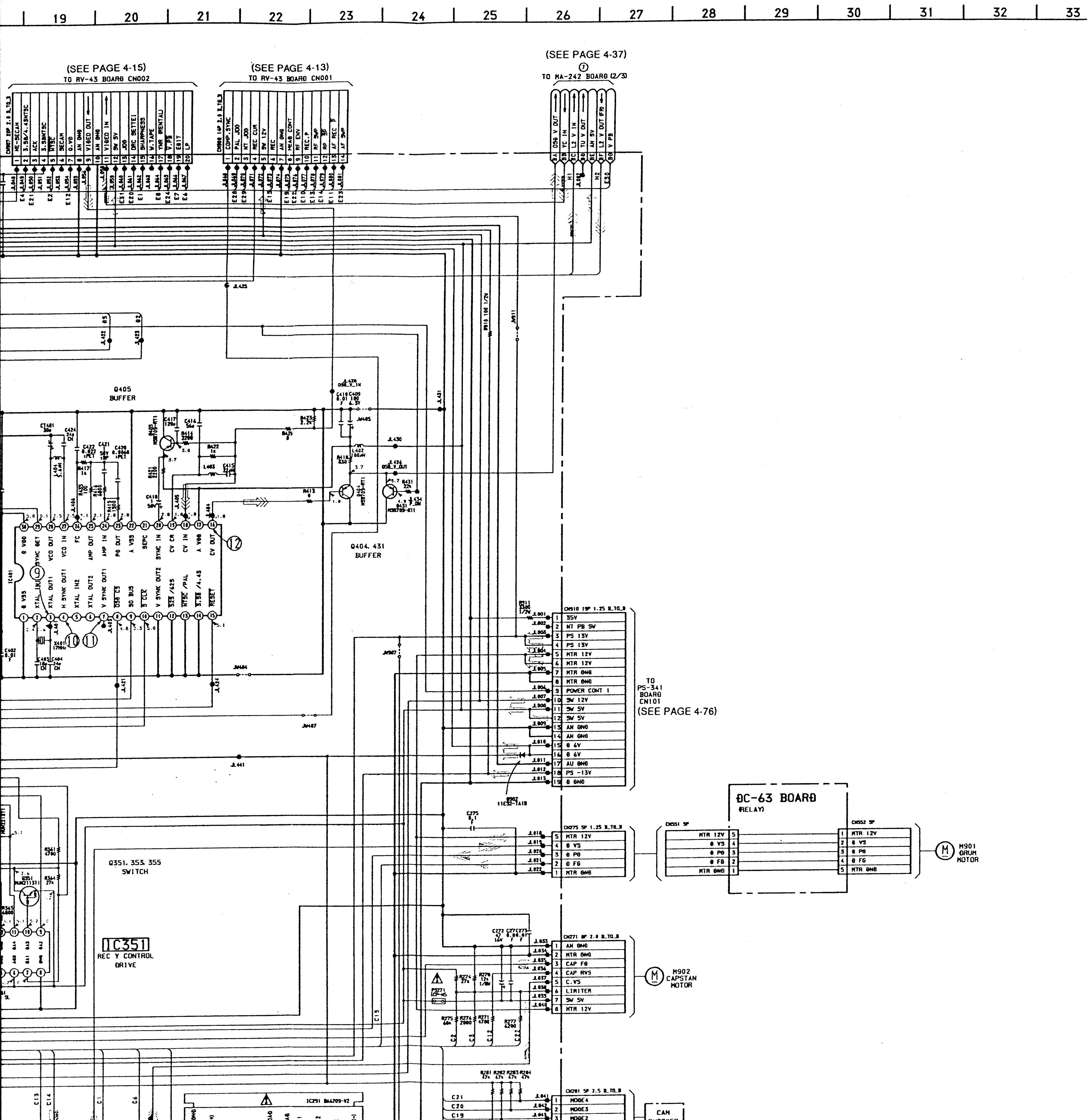
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
(SEE PAGE 4-39)
TO MA-242 BOARD (3/3)
Q245 SWITCH
Q247-249 SWITCH
(SEE PAGE 4-15)
TO RV-43 BOARD CN002
(SEE PAGE 4-13)
TO RV-43 BOARD CN001
(SEE PAGE 4-37)
TO MA-242 BOARD (2/3)
IC220 RESET
Q405 BUFFER
Q404, 431 BUFFER
IC401 LC7461M-9100-TLM OSD
IC201 SERVO/SYSTEM CONTROL
CN910 15P 1.25 B_TO_B
TO PS-341 BOARD CN101 (SEE PAGE 4-76)
DC-63 (RELAY)
Q351, 353, 355 SWITCH
IC351 REC Y CONTROL DRIVE
Q354 AMP
M902 CAPSTAN MOTOR
CAM ENCODER
M903 CAM MOTOR
Q243, 244 KR SCORE BUFFER
IC251 CAPSTAN MOTOR ERROR INTEGRATOR
IC291 CAM/LOAD MOTOR DRIVE
T.SENS
S.SENS
Q261 TAPE TOP SENSOR
Q262 TAPE END SENSOR
T.REEL
S.REEL
REC PRF.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33
(SEE PAGE 4-15)
TO RV-43 BOARD CN002
(SEE PAGE 4-13)
TO RV-43 BOARD CN001
(SEE PAGE 4-37)
⑦
TO MA-242 BOARD (2/3)
Q405
BUFFER
Q404, 431
BUFFER
IC401
⑨
⑩
⑪
⑫
CN910 19P 1.25 B_TO_B
35V
NT PB SW
PS 13V
PS 13V
MTR 12V
MTR 12V
MTR GND
MTR GND
POWER CONT 1
SW 12V
SW 5V
SW 5V
AN GND
AN GND
B 6V
B 6V
AU GND
PS -13V
B GND
TO
PS-341
BOARD
CN101
(SEE PAGE 4-76)
DC-63 BOARD
(RELAY)
CN551 5P
CN552 5P
CN275 5P 1.25 B_TO_B
MTR 12V
B VS
B PG
B FG
MTR GND
M901
DRUM
MOTOR
Q351, 353, 355
SWITCH
IC351
REC Y CONTROL
DRIVE
CN271 8P 2.0 B_TO_B
AN GND
MTR GND
CAP FG
CAP RVS
C.VS
LIMITER
SW 5V
MTR 12V
M902
CAPSTAN
MOTOR
CN281 5P 2.5 B_TO_B
MODE4
MODE3
MODE2
MODE1
GND (DIG)
CAM
ENCODER
CN291 3P 1.25 B_TO_B
CAM (-)
N.C
CAM (+)
M903
CAM
MOTOR
IC291 BA6209-V2
IC291
CAM/LOAD
MOTOR DRIVE
S251
PUSH SW
REC PRF.

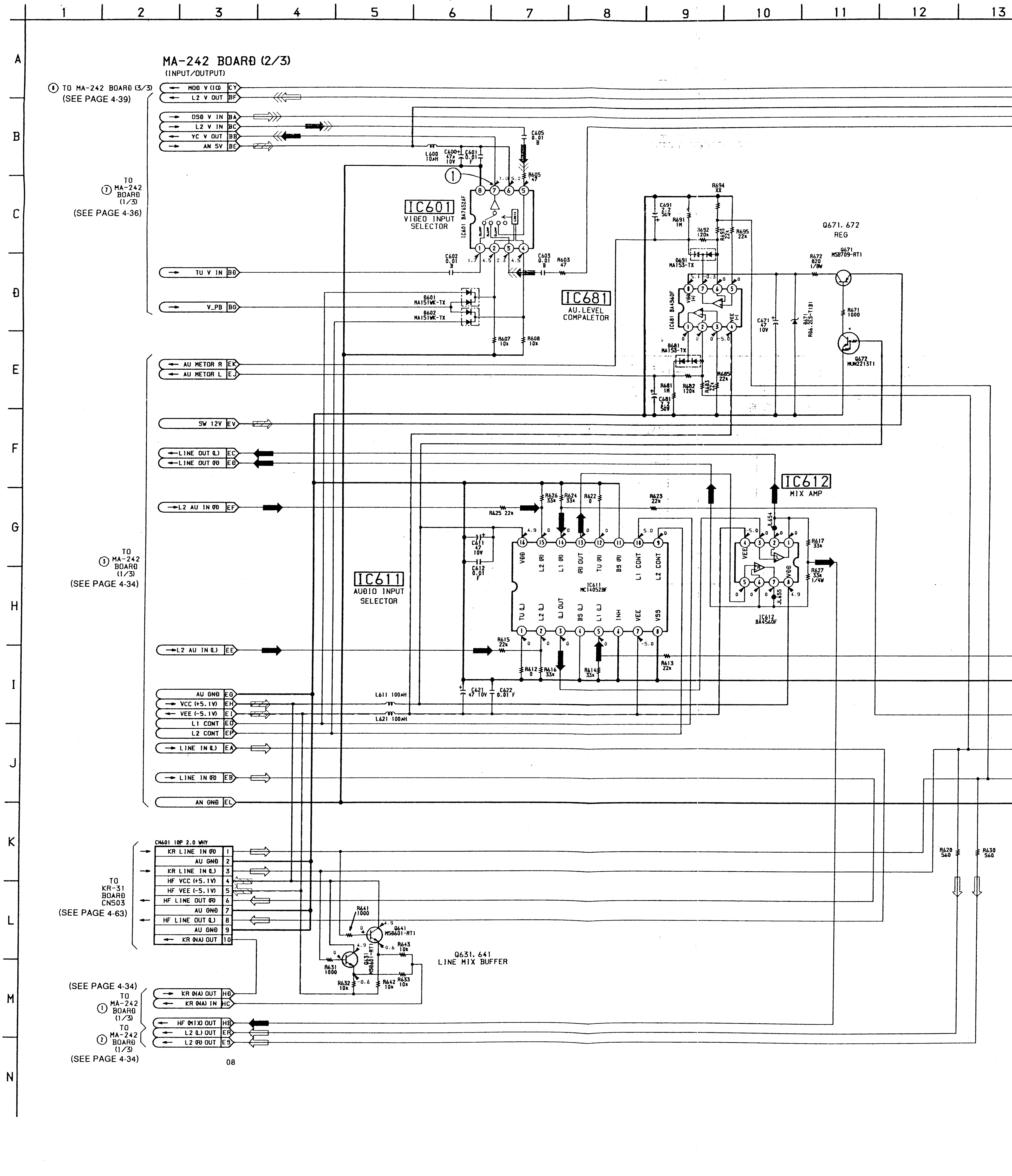
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SERVO/SYSTEM CONTROL, RELAY
MA-242 (1/3), DC-63

A-242 (INPUT/OUTPUT, TUNER) SCHEMATIC DIAGRAM
.SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. MA-242 BOARD : 2,000 series —

• Refer to page 4-30 for Printed Wiring Board.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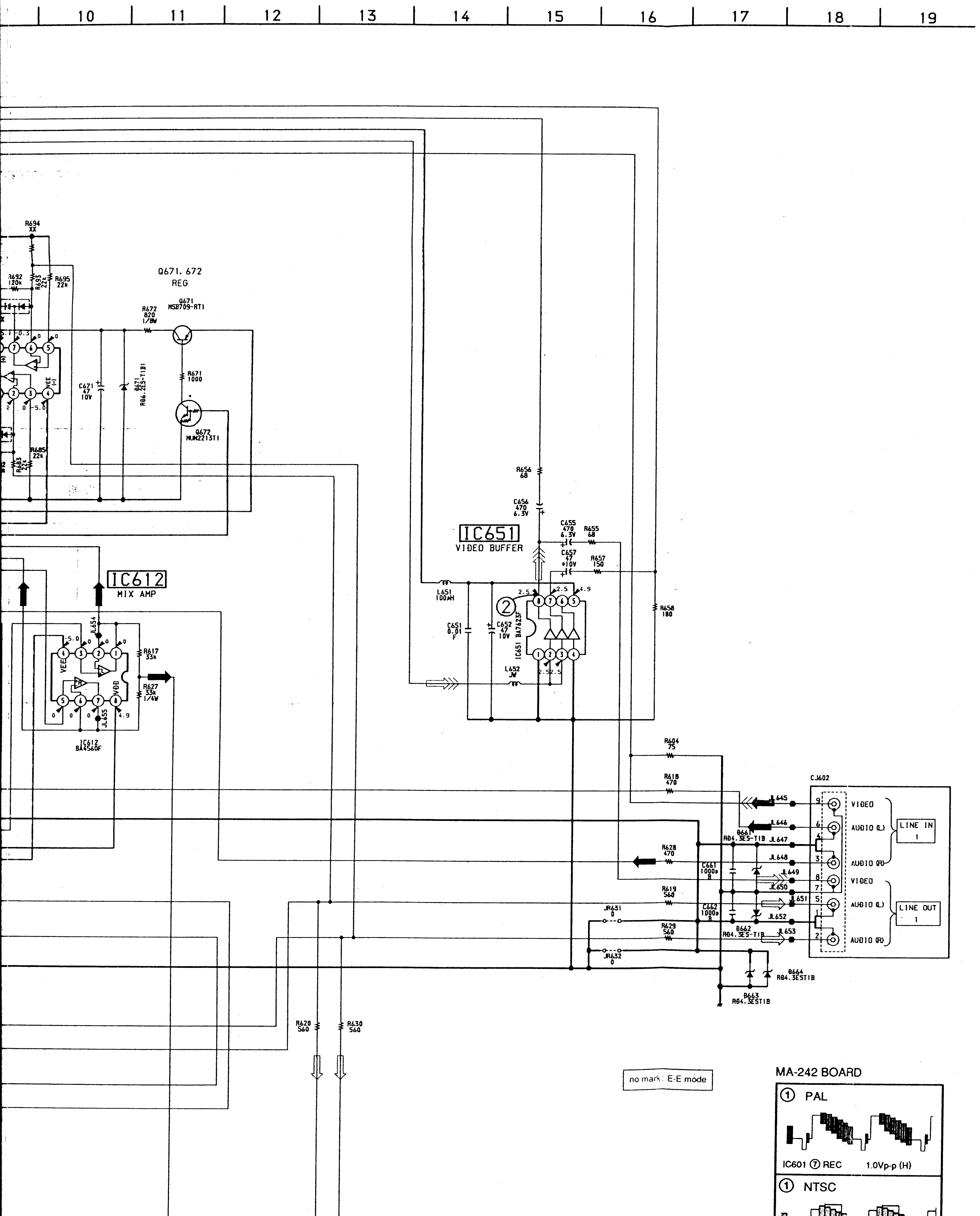
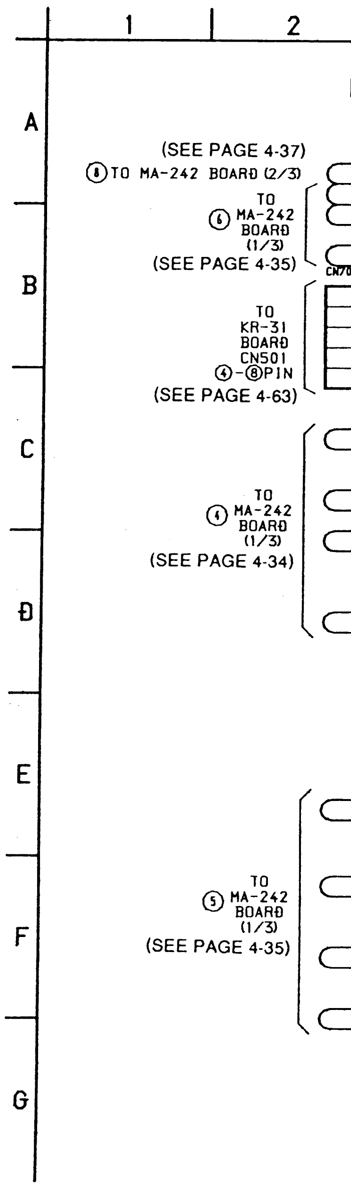
G
H
I
J
K
L
M
N
MA-242 BOARD (2/3)
(INPUT/OUTPUT)
8 TO MA-242 BOARD (3/3)
(SEE PAGE 4-39)
MOD V (IO)
L2 V OUT
OSD V IN
L2 V IN
YC V OUT
AN 5V
CY
BF
BA
BC
BB
BE
TO
7 MA-242 BOARD (1/3)
(SEE PAGE 4-36)
TU V IN
V_PB
BD
BG
IC601
VIDEO INPUT SELECTOR
IC601 BA7652AF
L600 10μH
C600 47 10V
C601 0.01 F
C605 0.01 B
R605 47
C602 0.01 B
C603 0.01 B
R603 47
D601 MA151WK-TX
D602 MA151WK-TX
R607 10k
R608 10k
IC681
AU.LEVEL COMPALETOR
IC681 BA4560F
C691 2.2 50V
R691 1M
R692 120k
R693 22k
R694 XX
R695 22k
D691 MA153-TX
D681 MA153-TX
R681 1M
R682 120k
R683 22k
R685 22k
C681 2.2 50V
C671 47 10V
D671 RD6.2ES-T1B1
Q671, 672
REG
Q671 MSB709-RT1
R672 820 1/8W
R671 1000
Q672 MUN2213T1
AU METOR R
AU METOR L
EK
EJ
SW 12V
EV
LINE OUT (L)
LINE OUT (R)
EC
ED
L2 AU IN (R)
EF
TO
3 MA-242 BOARD (1/3)
(SEE PAGE 4-34)
IC611
AUDIO INPUT SELECTOR
IC611 MC14052BF
VDD
L2 (R)
L1 (R)
(R) OUT
TU (R)
BS (R)
L1 CONT
L2 CONT
TU (L)
L2 (L)
(L) OUT
BS (L)
L1 (L)
INH
VEE
VSS
R625 22k
R626 33k
R624 33k
R622 0
R623 22k
C611 47 10V
C612 0.01 F
R615 22k
R612 0
R616 33k
R614 33k
R613 22k
C621 47 10V
C622 0.01 F
L611 100μH
L621 100μH
IC612
MIX AMP
IC612 BA4560F
JL654
JL655
R617 33k
R627 33k 1/4W
L2 AU IN (L)
EE
AU GND
VCC (+5.1V)
VEE (-5.1V)
L1 CONT
L2 CONT
LINE IN (L)
LINE IN (R)
AN GND
EG
EH
EI
EO
EP
EA
EB
EL
CN601 10P 2.0 WHY
KR LINE IN (R)
AU GND
KR LINE IN (L)
HF VCC (+5.1V)
HF VEE (-5.1V)
HF LINE OUT (R)
AU GND
HF LINE OUT (L)
AU GND
KR (NA) OUT
TO
KR-31 BOARD CN503
(SEE PAGE 4-63)
R641 1000
Q641 MSB601-RT1
R643 10k
Q631 MSB601-RT1
R631 1000
R632 10k
R642 10k
R633 10k
Q631, 641
LINE MIX BUFFER
R620 560
R630 560
(SEE PAGE 4-34)
TO
1 MA-242 BOARD (1/3)
KR (NA) OUT
KR (NA) IN
HB
HC
TO
2 MA-242 BOARD (1/3)
(SEE PAGE 4-34)
HF (MIX) OUT
L2 (L) OUT
L2 (R) OUT
HB
ER
ES
08

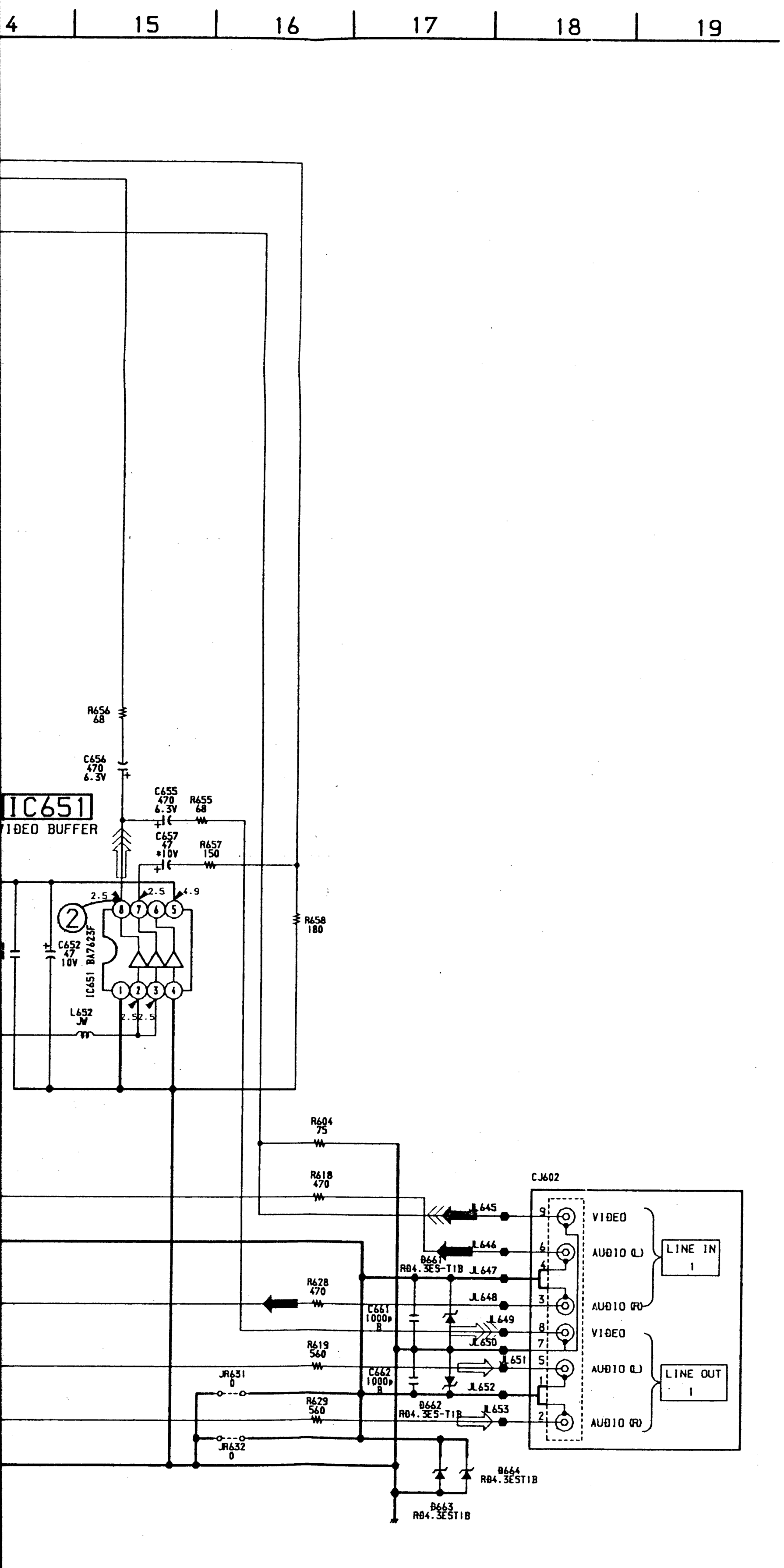

10
11
12
13
14
15
16
17
18
19
Q671, 672
REG
Q671
MSB709-RT1
Q672
MUN2213T1
R694
XX
R692
120k
R693
22k
R695
22k
R672
820
1/8W
R671
1000
C671
47
10V
D671
RD6.2ES-T1B1
R685
22k
R683
22k
IC612
MIX AMP
IC612
BA4560F
VEE
VDD
JL654
JL655
R617
33k
R627
33k
1/4W
R656
68
C656
470
6.3V
IC651
VIDEO BUFFER
C655
470
6.3V
R655
68
C657
47
10V
R657
150
L651
100μH
C651
0.01
F
C652
47
10V
IC651 BA7623F
L652
JW
R658
180
R604
75
R618
470
R628
470
R619
560
R629
560
JR631
0
JR632
0
C661
1000p
B
C662
1000p
B
D661
RD4.3ES-T1B
D662
RD4.3ES-T1B
D664
RD4.3EST1B
D663
RD4.3EST1B
JL645
JL646
JL647
JL648
JL649
JL650
JL651
JL652
JL653
CJ602
VIDEO
AUDIO (L)
AUDIO (R)
LINE IN
1
LINE OUT
1
R620
560
R630
560
MA-242 BOARD
① PAL
IC601 ⑦ REC 1.0Vp-p (H)
① NTSC
IC601 ⑦ REC 1.0Vp-p (H)
② PAL
IC651 ⑧ PB 2.0Vp-p (H)
② NTSC
IC651 ⑧ PB 2.0Vp-p (H)

no mark : E-E mode

• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡≫	➡
PB			⇨≫	⇨

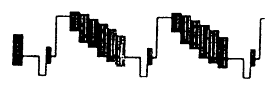

1
2
A
B
C
D
E
F
G
(SEE PAGE 4-37)
④ TO MA-242 BOARD (2/3)
TO
⑥ MA-242
BOARD
(1/3)
(SEE PAGE 4-35)
TO
KR-31
BOARD
CN501
④-⑧PIN
(SEE PAGE 4-63)
TO
① MA-242
BOARD
(1/3)
(SEE PAGE 4-34)
TO
⑤ MA-242
BOARD
(1/3)
(SEE PAGE 4-35)


4
15
16
17
18
19
R656
68
C656
470
6.3V
IC651
VIDEO BUFFER
C655
470
6.3V
R655
68
C657
47
*10V
R657
150
2.5
2.5
4.9
②
C652
47
10V
IC651 BA7623F
L652
JW
2.5
2.5
R658
180
R604
75
R618
470
R628
470
C661
1000p
B
R619
560
JR631
0
C662
1000p
B
R629
560
JR632
0
D661
RD4.3ES-T1B
D662
RD4.3ES-T1B
D663
RD4.3ESTIB
D664
RD4.3ESTIB
JL645
JL646
JL647
JL648
JL649
JL650
JL651
JL652
JL653
CJ602
VIDEO
AUDIO (L)
AUDIO (R)
LINE IN
1
VIDEO
AUDIO (L)
AUDIO (R)
LINE OUT
1

no mark : E-E mode

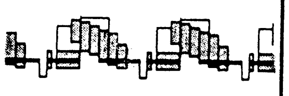
MA-242 BOARD

① PAL



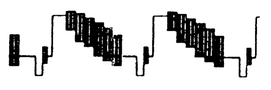
IC601 ⑦ REC 1.0Vp-p (H)

① NTSC



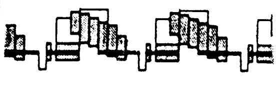
IC601 ⑦ REC 1.0Vp-p (H)

② PAL

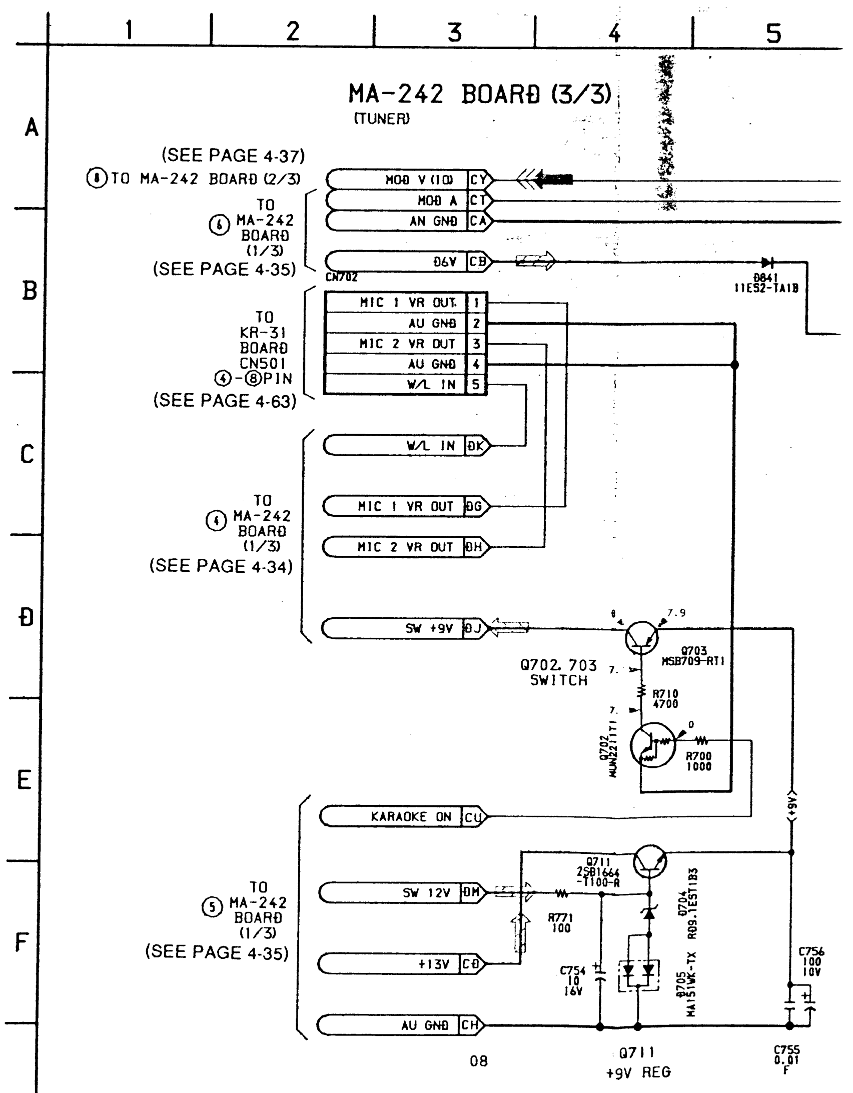


IC651 ⑧ PB 2.0Vp-p (H)

② NTSC



IC651 ⑧ PB 2.0Vp-p (H)


1
2
3
4
5
A
B
C
D
E
F
G
MA-242 BOARD (3/3)
(TUNER)
(SEE PAGE 4-37)
⑧TO MA-242 BOARD (2/3)
TO
⑥ MA-242
BOARD
(1/3)
(SEE PAGE 4-35)
MOD V (10)
CY
MOD A
CT
AN GND
CA
D6V
CB
CN702
D841
11ES2-TA1B
TO
KR-31
BOARD
CN501
④-⑧PIN
(SEE PAGE 4-63)
MIC 1 VR OUT
1
AU GND
2
MIC 2 VR OUT
3
AU GND
4
W/L IN
5
W/L IN
DK
TO
④ MA-242
BOARD
(1/3)
(SEE PAGE 4-34)
MIC 1 VR OUT
DG
MIC 2 VR OUT
DH
SW +9V
DJ
0
7.9
Q703
MSB709-RT1
Q702, 703
SWITCH
7.
R710
4700
7.
Q702
MUN2211T1
0
R700
1000
KARAOKE ON
CU
<+9V>
TO
⑤ MA-242
BOARD
(1/3)
(SEE PAGE 4-35)
SW 12V
DM
Q711
2SB1664
-T100-R
R771
100
D704
RD9.1ESTIB3
+13V
CB
C754
10
16V
D705
MA151WK-TX
C756
100
10V
AU GND
CH
08
Q711
+9V REG
C755
0.01
F

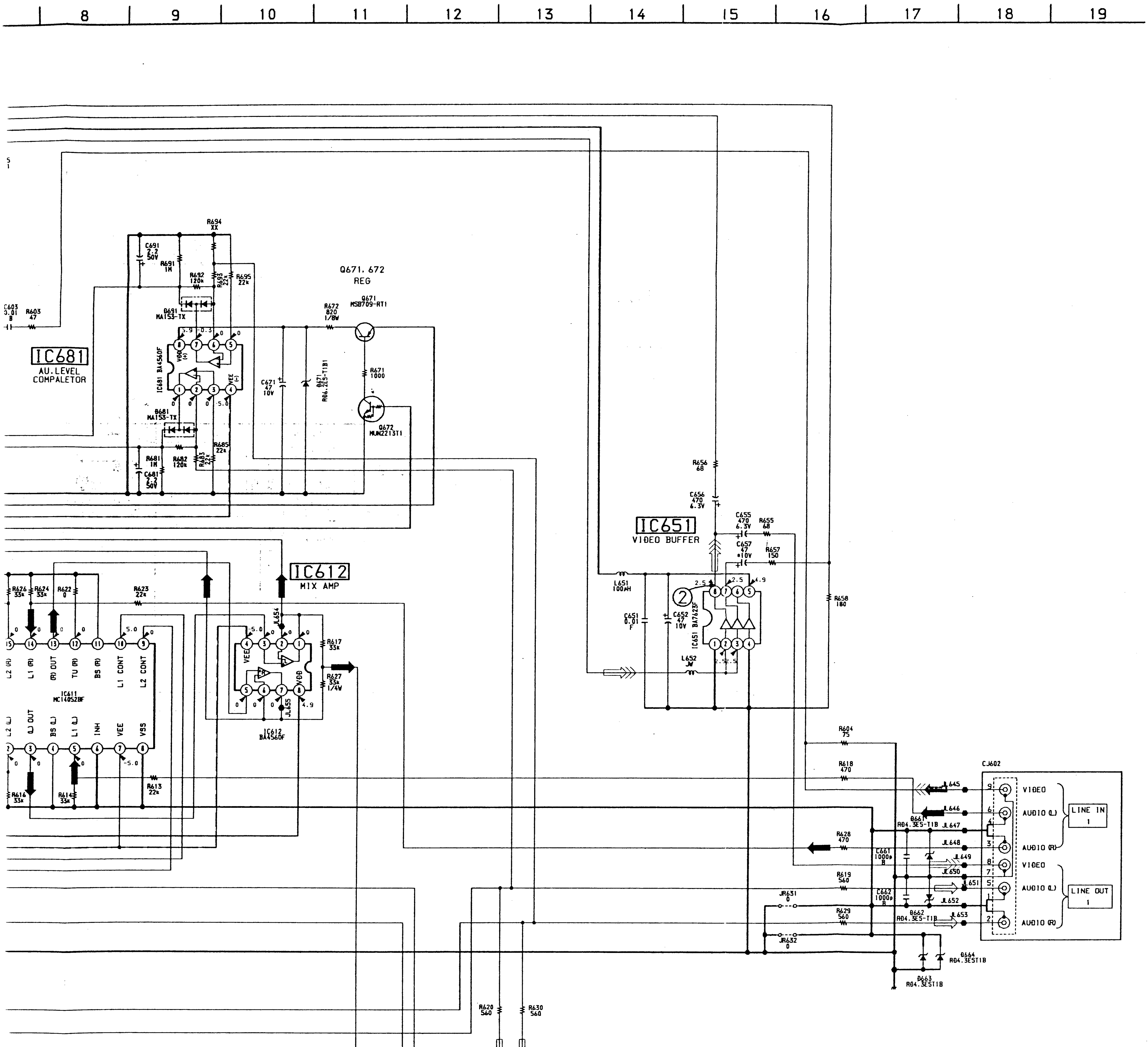
path

VIDEO Signal			AUDIO Signal
CHROMA	Y	Y/CHROMA	
		➡︎≫	➡︎
		⇨≫	⇨

• Signal pa

	Cl
REC	
PB	

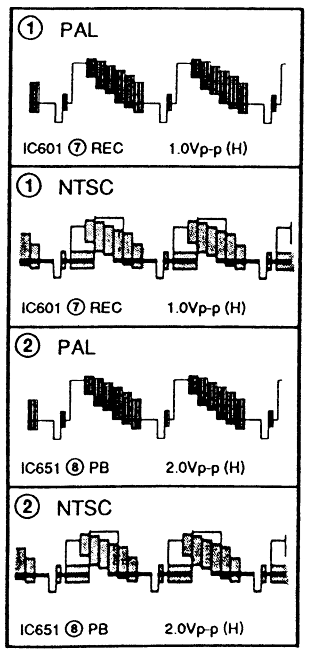
nted Wiring Board.



8
9
10
11
12
13
14
15
16
17
18
19
IC681
AU.LEVEL COMPALETOR
IC681 BA4560F
D691 MA153-TX
D681 MA153-TX
R694 XX
C691 2.2 50V
R691 1M
R692 120k
R693 22k
R695 22k
R681 1M
R682 120k
R683 22k
R685 22k
C681 2.2 50V
C603 0.01 B
R603 47
Q671, 672 REG
Q671 MSB709-RT1
Q672 MUN2213T1
R672 820 1/8W
R671 1000
C671 47 10V
D671 RD6.2ES-T1B1
IC612
MIX AMP
IC612 BA4560F
R617 33k
R627 33k 1/4W
JL654
JL655
VEE
VDD
IC611 MC14052BF
R626 33k
R624 33k
R622 0
R623 22k
R616 33k
R614 33k
R613 22k
L2 (R)
L1 (R)
(R) OUT
TU (R)
BS (R)
L1 CONT
L2 CONT
L2 (L)
(L) OUT
BS (L)
L1 (L)
INH
VEE
VSS
IC651
VIDEO BUFFER
IC651 BA7623F
L651 100μH
C651 0.01 F
C652 47 10V
L652
R656 68
C656 470 6.3V
C655 470 6.3V
R655 68
C657 47 10V
R657 150
R658 180
R604 75
R618 470
R628 470
R619 560
R629 560
JR631 0
JR632 0
C661 1000p B
C662 1000p B
D661 RD4.3ES-T1B
D662 RD4.3ES-T1B
D663 RD4.3EST1B
D664 RD4.3EST1B
JL645
JL646
JL647
JL648
JL649
JL650
JL651
JL652
JL653
CJ602
VIDEO
AUDIO (L)
AUDIO (R)
LINE IN 1
LINE OUT 1
R620 560
R630 560

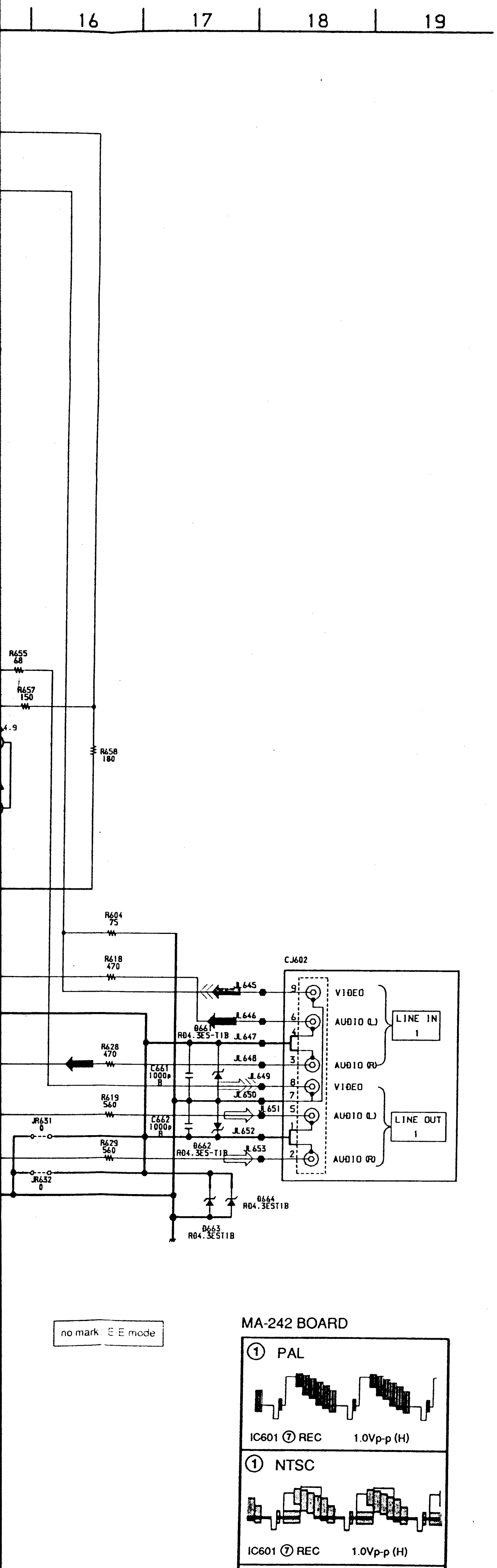
no mark : E-E mode

MA-242 BOARD



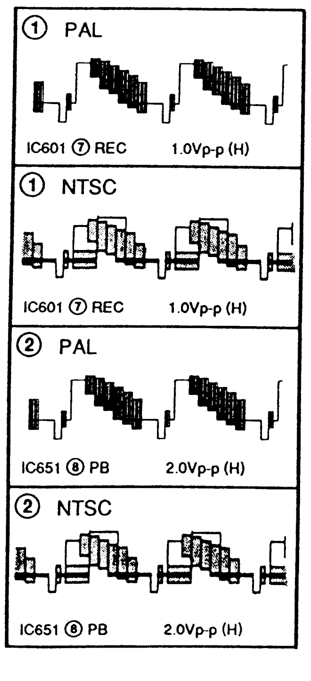
- **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

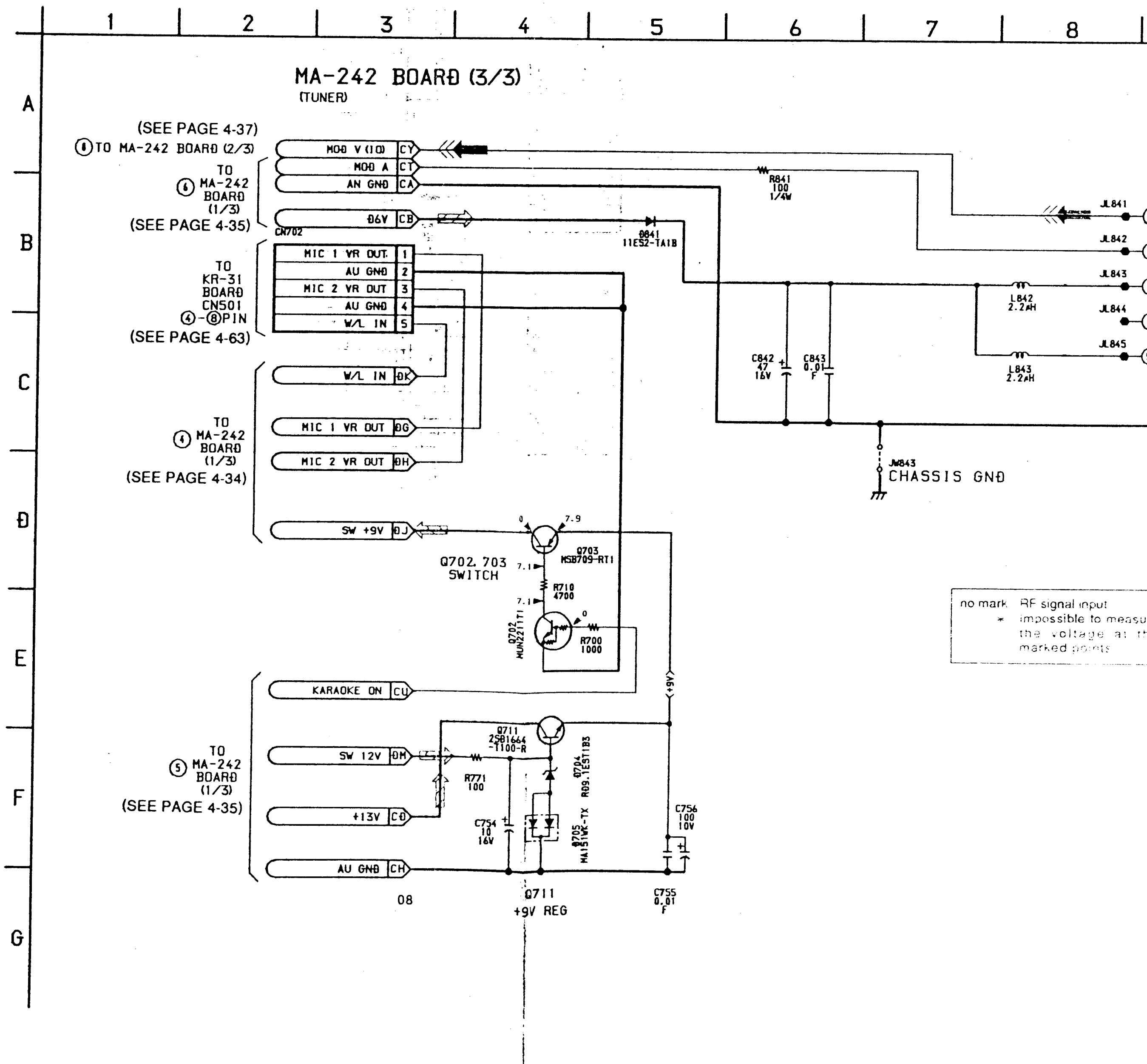

16
17
18
19
R655 68
R657 150
R658 180
R604 75
R618 470
R628 470
R619 560
R629 560
JR631 0
JR632 0
C661 1000p
C662 1000p
D661 R04.3ES-T1B
D662 R04.3ES-T1B
D663 R04.3ES1T1B
D664 R04.3ES1T1B
JL645
JL646
JL647
JL648
JL649
JL650
JL651
JL652
JL653
CJ602
VIDEO
AUDIO (L)
AUDIO (R)
LINE IN 1
LINE OUT 1

no mark : E-E mode

MA-242 BOARD

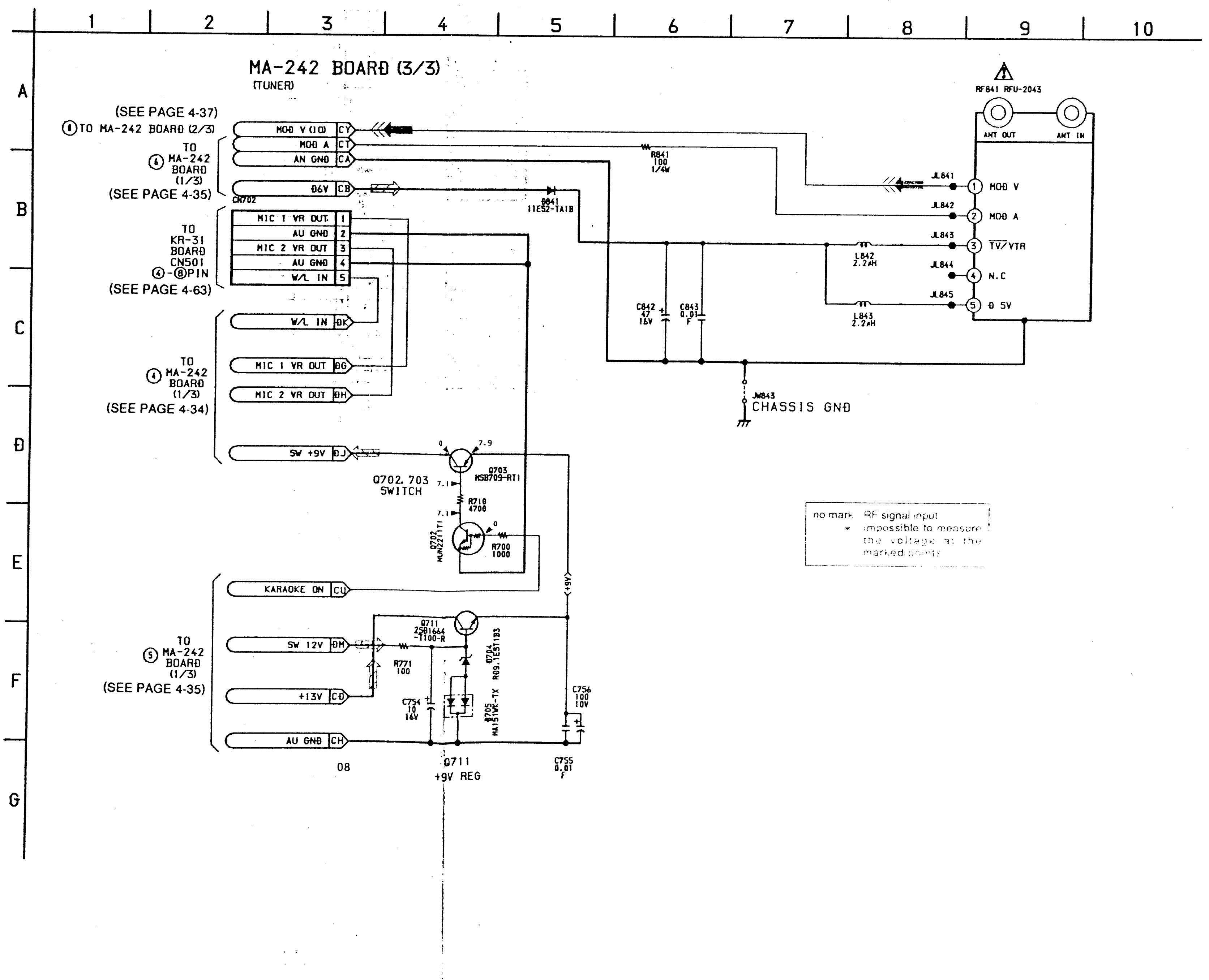


al		AUDIO
	Y/CHROMA	Signal
	➡	➡
	⇨	⇨


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
MA-242 BOARD (3/3)
(TUNER)
(SEE PAGE 4-37)
⑧ TO MA-242 BOARD (2/3)
TO ⑥ MA-242 BOARD (1/3)
(SEE PAGE 4-35)
MOD V (IO)
MOD A
AN GND
D6V
CY
CT
CA
CB
CN702
R841 100 1/4W
D841 11ES2-TA1B
TO KR-31 BOARD CN501 ④-⑧PIN
(SEE PAGE 4-63)
MIC 1 VR OUT
AU GND
MIC 2 VR OUT
AU GND
W/L IN
W/L IN
DK
TO ④ MA-242 BOARD (1/3)
(SEE PAGE 4-34)
MIC 1 VR OUT
MIC 2 VR OUT
DG
DH
SW +9V
DJ
C842 47 16V
C843 0.01 F
L842 2.2μH
L843 2.2μH
JL841
JL842
JL843
JL844
JL845
JW843
CHASSIS GND
Q702, 703 SWITCH
Q703 HSB709-RT1
R710 4700
R700 1000
Q702 MUN2211T1
7.9
7.1
KARAOKE ON
CU
TO ⑤ MA-242 BOARD (1/3)
(SEE PAGE 4-35)
SW 12V
DM
+13V
CO
AU GND
CH
Q711 2SD1664 -T100-R
R771 100
C754 10 16V
D704 RD9.1ES-T1B3
D705 MA151WK-TX
C756 100 10V
C755 0.01 F
(+9V)
Q711 +9V REG
08
no mark : RF signal input
* : impossible to measure the voltage at the marked points

• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
MA-242 BOARD (3/3)
(TUNER)
(SEE PAGE 4-37)
① TO MA-242 BOARD (2/3)
TO
⑥ MA-242
BOARD
(1/3)
(SEE PAGE 4-35)
MOD V (IO) CY
MOD A CT
AN GND CA
D6V CB
CN702
D841
11ES2-TA1B
TO
KR-31
BOARD
CN501
④-⑧PIN
(SEE PAGE 4-63)
MIC 1 VR OUT 1
AU GND 2
MIC 2 VR OUT 3
AU GND 4
W/L IN 5
W/L IN DK
TO
④ MA-242
BOARD
(1/3)
(SEE PAGE 4-34)
MIC 1 VR OUT DG
MIC 2 VR OUT DH
SW +9V DJ
0
7.9
Q703
MSB709-RT1
Q702, 703
SWITCH
7.1
R710
4700
7.1
Q702
MUN2211T1
0
R700
1000
KARAOKE ON CU
TO
⑤ MA-242
BOARD
(1/3)
(SEE PAGE 4-35)
SW 12V DM
+13V CD
AU GND CH
Q711
2SB1664
-T100-R
R771
100
D704
RD9.1ESTIB3
D705
MA151WK-TX
C754
10
16V
C756
100
10V
C755
0.01
F
(+9V)
08
Q711
+9V REG
R841
100
1/4W
C842
47
16V
C843
0.01
F
L842
2.2μH
L843
2.2μH
JW843
CHASSIS GND
RF841 RFU-2043
ANT OUT
ANT IN
JL841
JL842
JL843
JL844
JL845
① MOD V
② MOD A
③ TV/VTR
④ N.C
⑤ D 5V

no mark : RF signal input
* : impossible to measure the voltage at the marked points

• **Signal path**

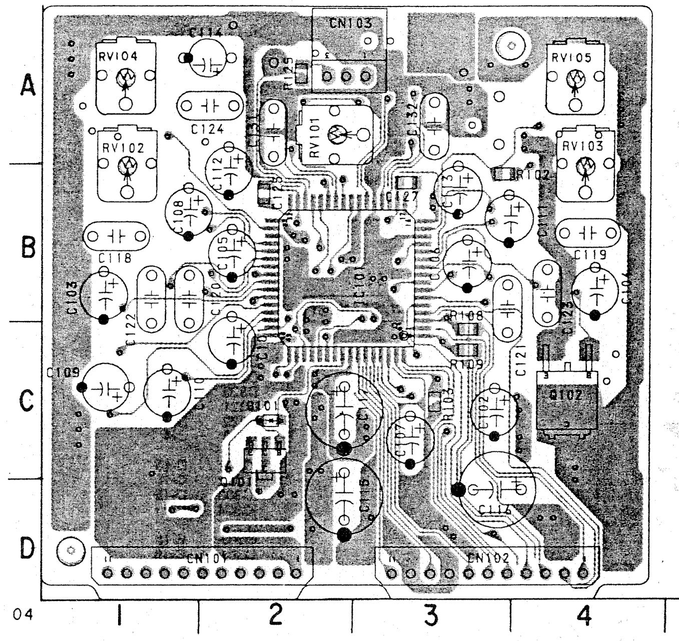
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

HF-34 (AUDIO PROCESS) PRINTED WIRING BOARD

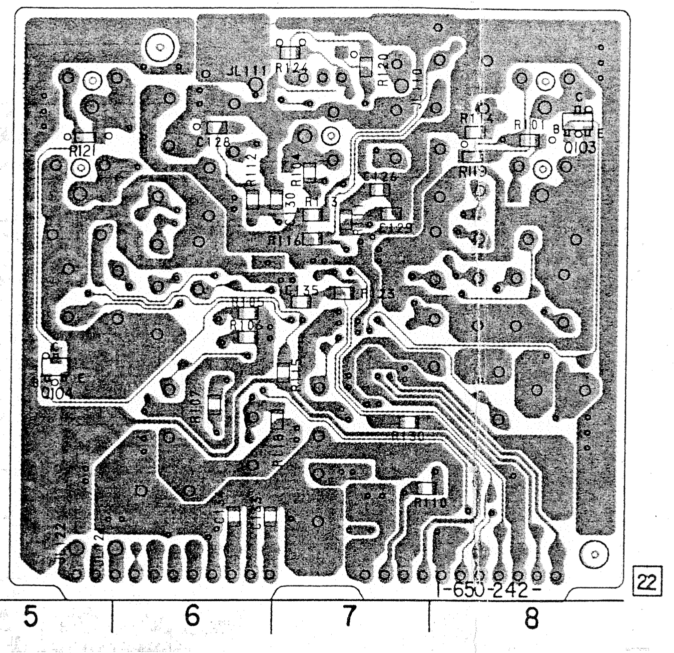
— Ref. No. HF-34 BOARD : 3,000 series —

HF-34 BOARD (COMPONENT SIDE)



CN103
RV104
RV105
RV102
RV103
RV101
C124
C118
C119
C105
C121
C114
Q101
Q102
CN101
CN102
A
B
C
D
04
1
2
3
4

HF-34 BOARD (CONDUCTOR SIDE)

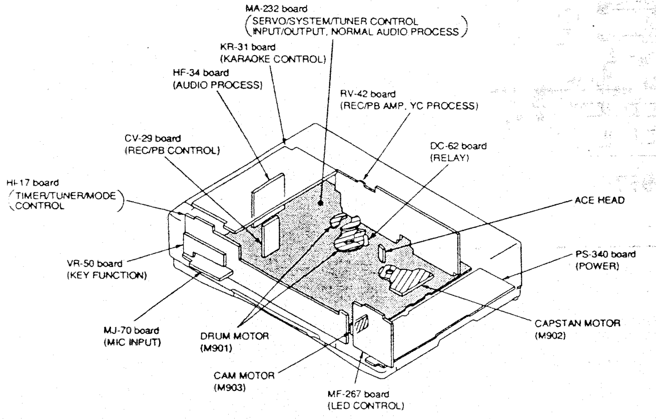


R121
R124
R120
R101
Q103
Q104
R116
R110
1-650-242-
22
5
6
7
8

HF-34 BOARD	
CN101	D-1
CN102	D-3
CN103	A-2
D101	C-2
IC101	B-2
Q101	C-2
Q102	C-4
Q103	A-8
Q104	C-5

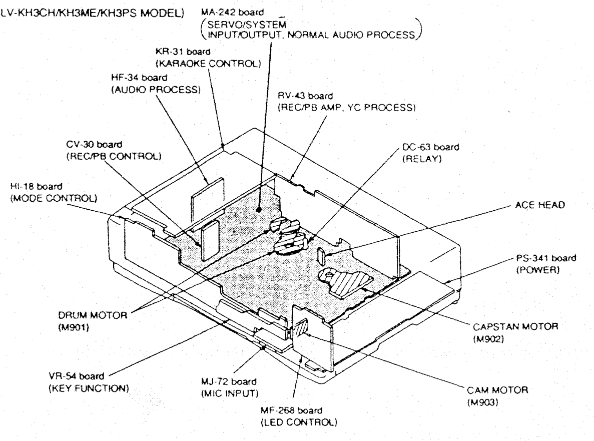
There are few cases that the part isn't mounted in this model is printed on this diagram.

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)



MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

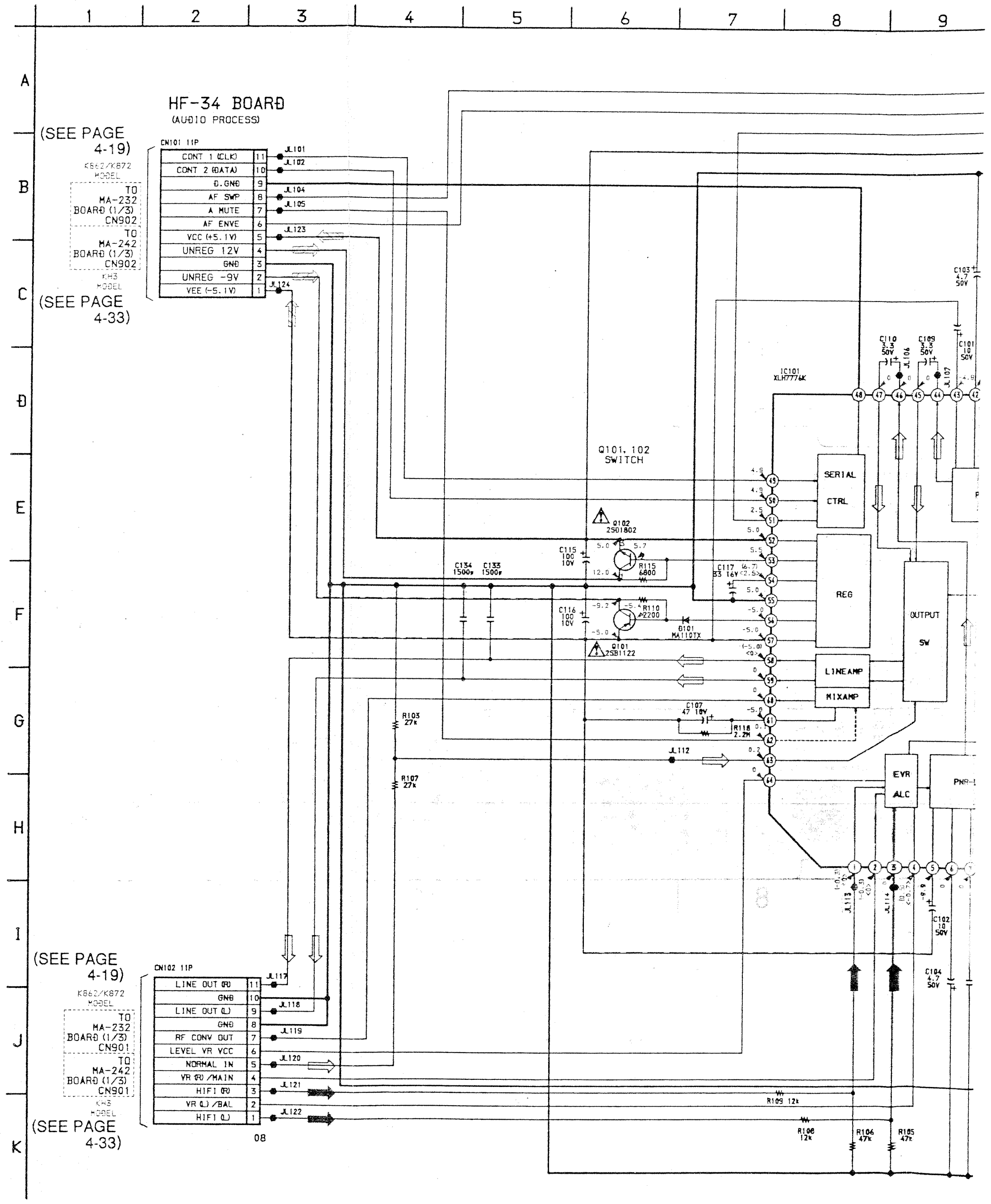
(SLV-KH3CH/KH3ME/KH3PS MODEL)



MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

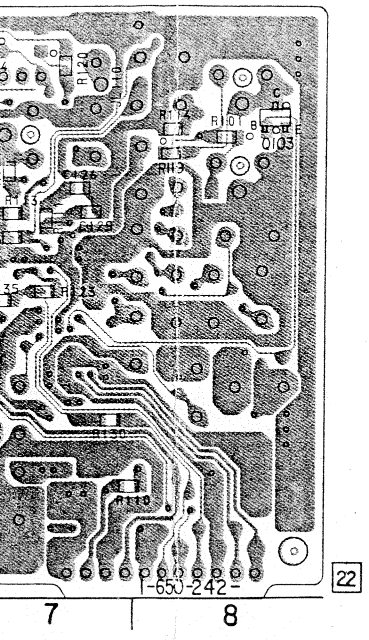
HF-34 (AUDIO PROCESS) SCHEMATIC DIAGRAM

— Ref. No. HF-34 BOARD : 3,000 series —



1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
K
HF-34 BOARD
(AUDIO PROCESS)
(SEE PAGE 4-19)
K862/K872 MODEL
TO MA-232 BOARD (1/3) CN902
TO MA-242 BOARD (1/3) CN902
KH3 MODEL
(SEE PAGE 4-33)
CN101 11P
CONT 1 (CLK) 11
CONT 2 (DATA) 10
D.GND 9
AF SWP 8
A MUTE 7
AF ENVE 6
VCC (+5.1V) 5
UNREG 12V 4
GND 3
UNREG -9V 2
VEE (-5.1V) 1
JL101
JL102
JL104
JL105
JL123
JL124
Q101, 102
SWITCH
Q102
Q101
IC101
SERIAL
CTRL
REC
OUTPUT
SW
LINEAMP
MIXAMP
EVR
ALC
C134
C133
C115
C116
C117
C107
R115
R116
R118
R105
R107
R109
R106
R104
R103
JL112
(SEE PAGE 4-19)
K862/K872 MODEL
TO MA-232 BOARD (1/3) CN901
TO MA-242 BOARD (1/3) CN901
KH3 MODEL
(SEE PAGE 4-33)
CN102 11P
LINE OUT (R) 11
GND 10
LINE OUT (L) 9
GND 8
RF CONV OUT 7
LEVEL VR VCC 6
NORMAL IN 5
VR (R) /MAIN 4
HIFI (R) 3
VR (L) /BAL 2
HIFI (L) 1
JL117
JL118
JL119
JL120
JL121
JL122
08

NDUCTOR SIDE)

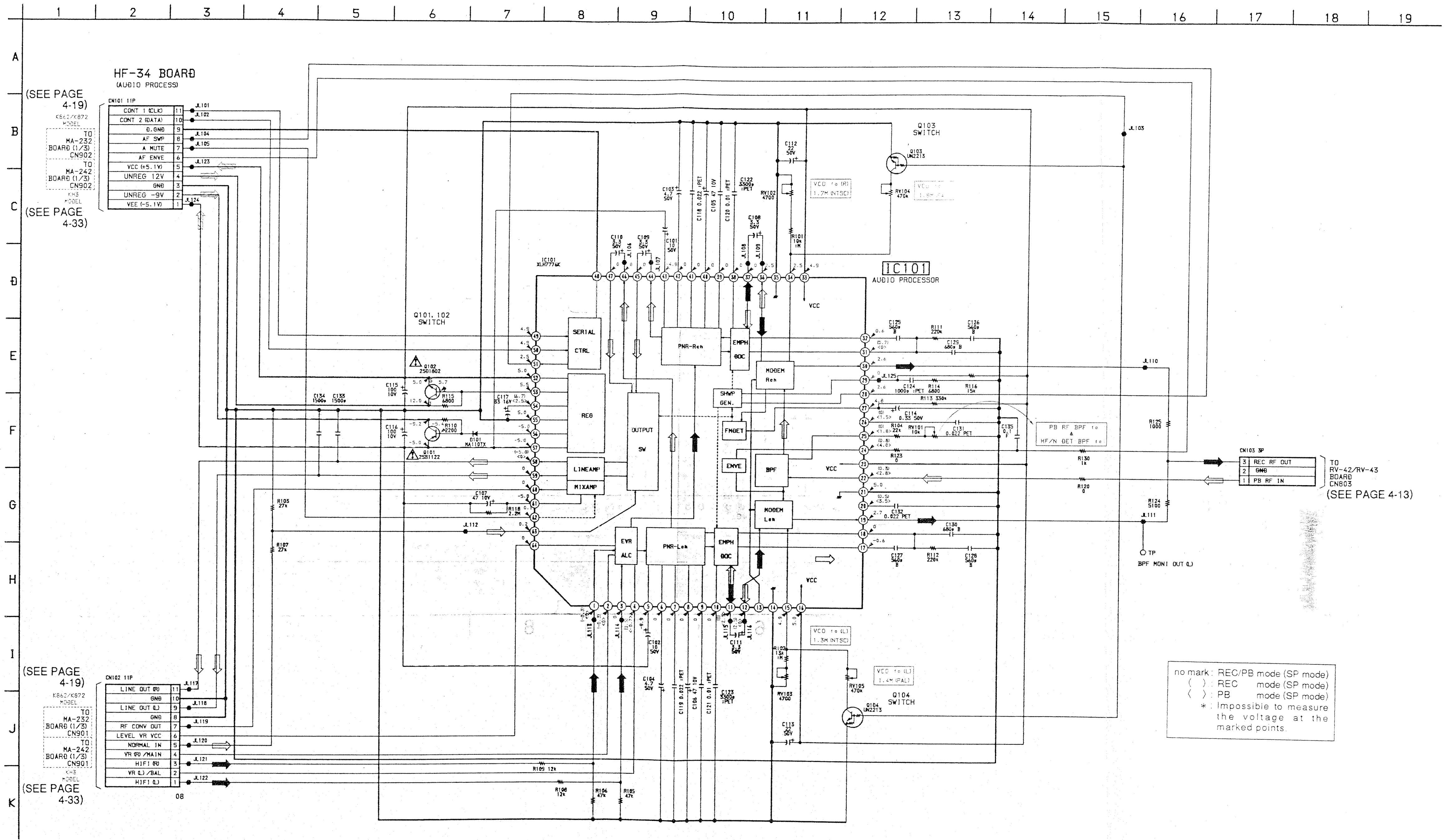

R120
R114
R101
C126
RH3
IC103
LH123
R110
1-650-242-
22
7
8

HF-34 BOARD	
CN101	D-1
CN102	D-3
CN103	A-2
D101	C-2
IC101	B-2
Q101	C-2
Q102	C-4
Q103	A-8
Q104	C-5

cases that the part isn't mounted
is printed on this diagram.

HF-34 (AUDIO PROCESS) SCHEMATIC DIAGRAM

— Ref. No. HF-34 BOARD : 3,000 series —


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
HF-34 BOARD
(AUDIO PROCESS)
(SEE PAGE 4-19)
K862/K872 MODEL
TO MA-232 BOARD (1/3) CN902
TO MA-242 BOARD (1/3) CN902
KH3 MODEL
(SEE PAGE 4-33)
CN101 11P
CONT 1 (CLK) 11
CONT 2 (DATA) 10
D.GND 9
AF SWP 8
A MUTE 7
AF ENVE 6
VCC (+5.1V) 5
UNREG 12V 4
GND 3
UNREG -9V 2
VEE (-5.1V) 1
JL101
JL102
JL104
JL105
JL123
JL124
Q101, 102 SWITCH
Q102 2SD1602
Q101 2SB1122
D101 MA110TX
IC101 XLH7776K
IC101
AUDIO PROCESSOR
SERIAL CTRL
REG
OUTPUT SW
LINEAMP
MIXAMP
PNR-Rch
PNR-Lch
EMPH BOC
MODEM Rch
MODEM Lch
SHWP GEN.
FMDET
ENVE
BPF
EVR ALC
VCC
Q103 SWITCH
Q103 UN2213
RV104 47k
VCO fo (R) 1.7M (NTSC)
Q104 SWITCH
Q104 UN2213
RV105 470k
VCO fo (L) 1.3M (NTSC)
PB RF BPF fo & HF/N DET BPF fo
CN103 3P
3 REC RF OUT
2 GND
1 PB RF IN
TO RV-42/RV-43 BOARD CN803
(SEE PAGE 4-13)
TP
BPF MONI OUT (L)
JL103
JL110
JL111
JL112
R125 1000
R124 5100
R130 1k
R120 0
C125 560p B
R111 220k
C126 560p B
C129 680p B
C124 1000p :PET
R114 6800
R116 15k
R113 330k
C114 0.33 50V
R104 22k
RV101 10k
C131 0.022 PET
C135 0.1 F
R123 0
C132 0.022 PET
C130 680p B
C127 560p B
R112 220k
C128 560p B
C110 3.3 50V
C109 3.3 50V
C101 10 50V
R101 10k :M
R102 13k :M
C102 10 50V
C111 3.3 50V
C117 33 16V
R118 2.2M
R105 27k
R107 27k
C134 1500p
C133 1500p
C115 100 10V
C116 100 10V
R115 6800
R110 2200
CN102 11P
LINE OUT (R) 11
GND 10
LINE OUT (L) 9
GND 8
RF CONV OUT 7
LEVEL VR VCC 6
NORMAL IN 5
VR (R) /MAIN 4
HIFI (R) 3
VR (L) /BAL 2
HIFI (L) 1
JL117
JL118
JL119
JL120
JL121
JL122
08
R109 12k
R108 12k
R106 47k
R105 47k
JL106
JL107
JL108
JL109
JL113
JL114
JL115
JL116
JL125

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)
＊ : Impossible to measure the voltage at the marked points.

• Signal path

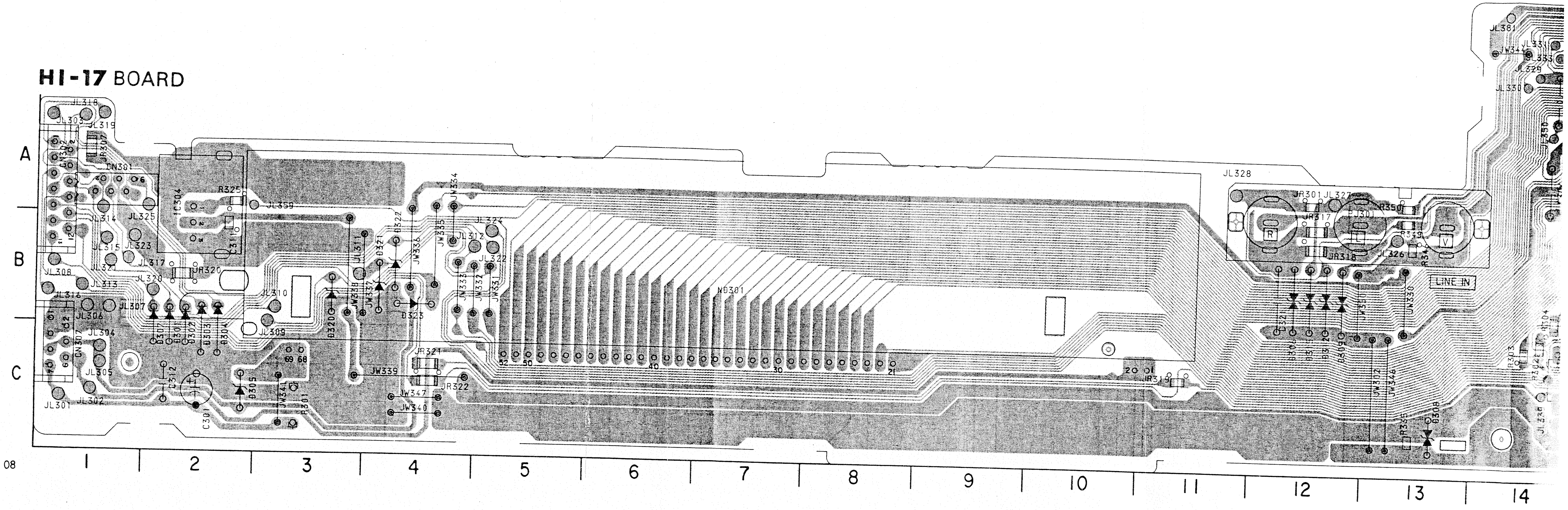
	AUDIO Signal
REC	➡
PB	⇨

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

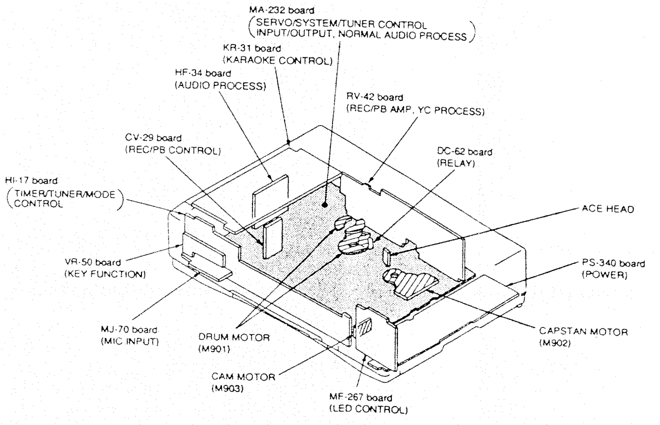
HI-17 (TIMER/TUNER/MODE CONTROL) PRINTED WIRING BOARD (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. HI-17 BOARD : 3,000 series —

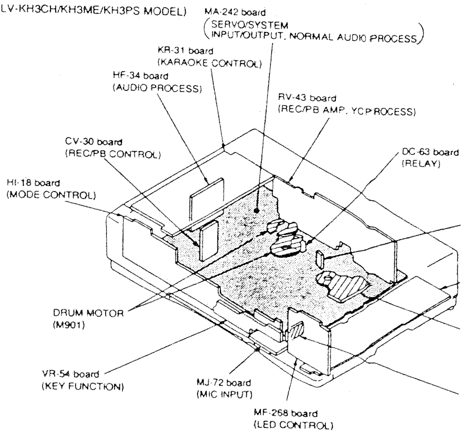
HI-17 BOARD

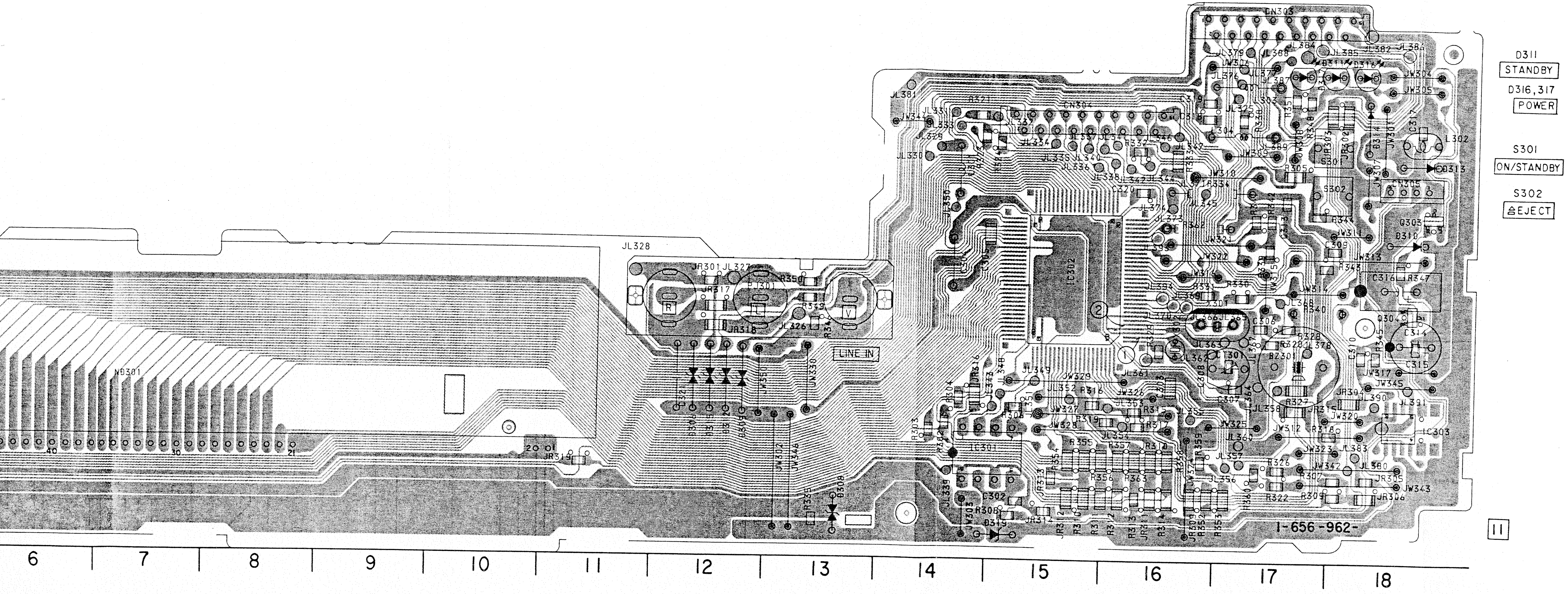

A
B
C
08
1
2
3
4
5
6
7
8
9
10
11
12
13
14
JL318
JL303
JL319
CN302
JR307
CN301
IC304
R325
JL359
JL314
JL325
JL315
JL323
JL317
JR320
C311
JL308
JL327
JL313
JL320
JL316
JL306
JL307
JL304
CN307
JL305
JL301
JL302
C312
C301
D307
D301
D302
D303
D304
D305
JW341
R301
JL310
JL309
D320
JW338
JW337
JL311
D321
D322
JW336
D323
JW335
JW334
JW339
JR321
JR322
JW347
JW340
JL324
JL312
JL322
JW333
JW332
JW331
ND301
JL328
JR301
JL327
R350
JR317
R
JR318
JL326
LINE IN
JW330
JW302
JW346
R335
D308
JL381
JL331
JL333
JL329
JL330

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)


MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YCPROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
DRUM MOTOR
(M901)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
MF-268 board
(LED CONTROL)



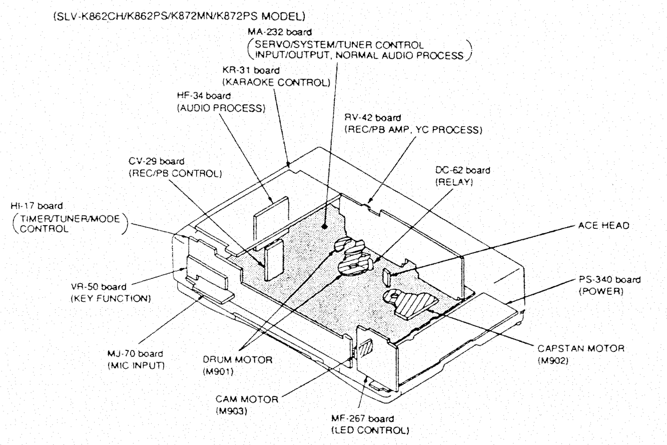
D311
STANDBY
D316,317
POWER
S301
ON/STANDBY
S302
≙EJECT
LINE IN
JL328
N9301
CN303
CN304
IC301
IC302
IC303
1-656-962-
11
6
7
8
9
10
11
12
13
14
15
16
17
18

HI-17 BOARD

CN301	C-1
CN302	C-1
CN303	A-17
CN304	A-15
CN305	B-18
CN307	D-1
D301	D-2
D302	D-2
D303	D-2
D304	D-2
D305	E-2
D306	D-12
D307	D-2
D309	D-12
D311	A-18
D312	D-12
D313	B-18
D314	B-18
D315	D-12
D316	A-18
D317	A-17
D320	D-3
D321	D-4
D322	D-4
D323	D-4
IC301	D-15
IC302	C-15
IC303	D-18
IC304	C-2
Q303	B-18
Q304	C-18

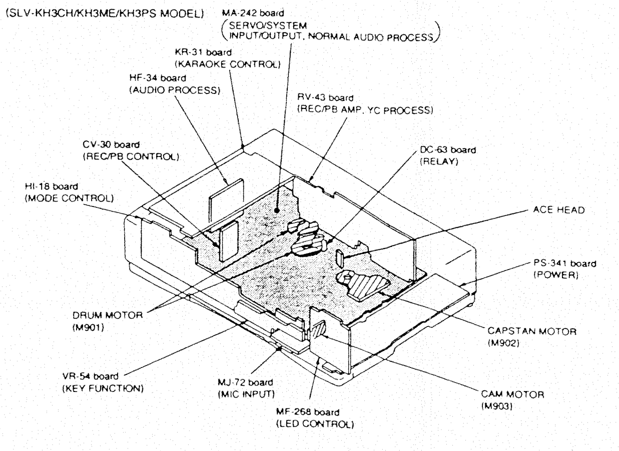
There are few cases that the part isn't mounted in this model is printed on this diagram.

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)



MA-232 board
(SERVO/SYSTEM/TUNER CONTROL
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

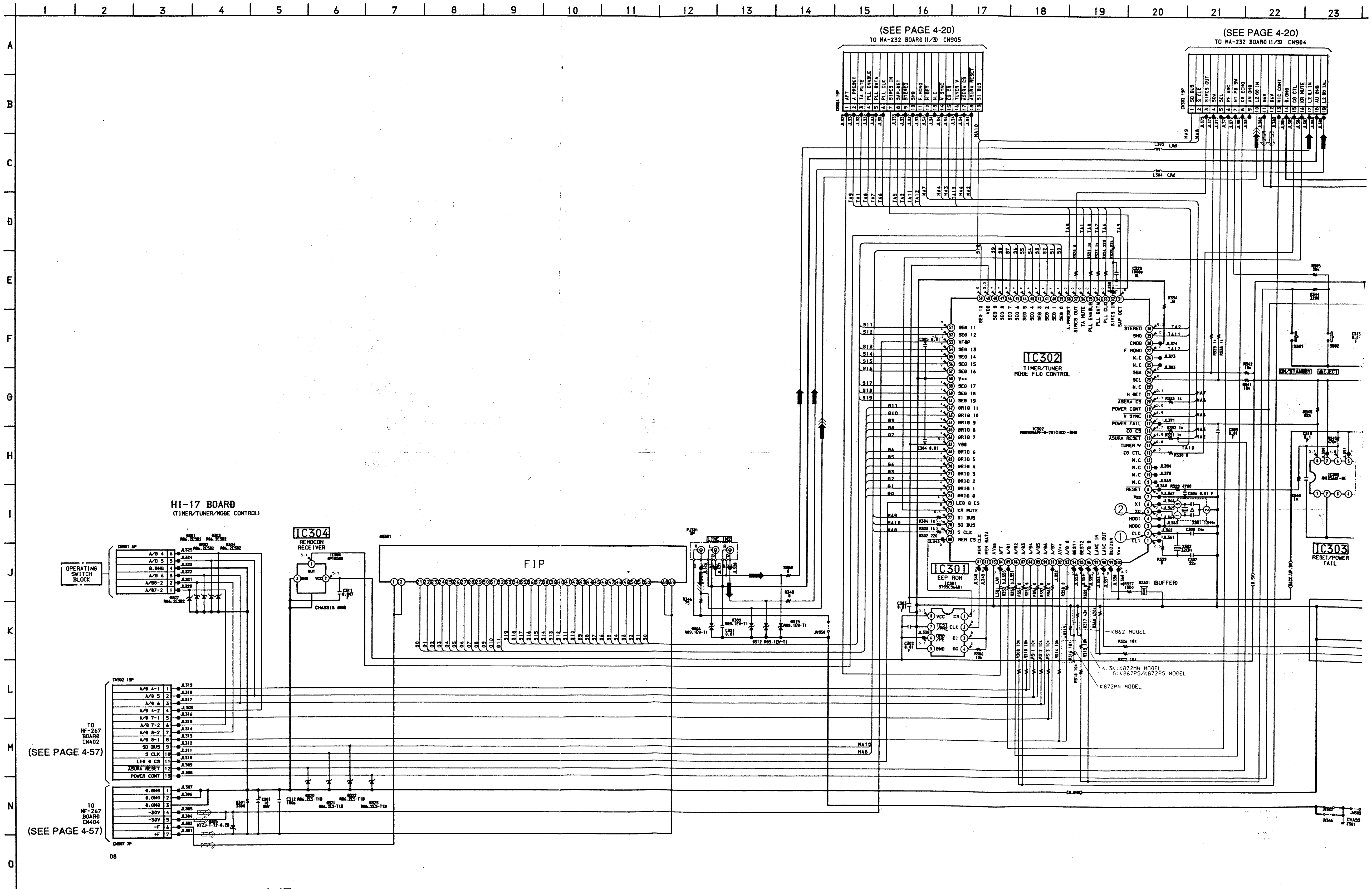
(SLV-KH3CH/KH3ME/KH3PS MODEL)

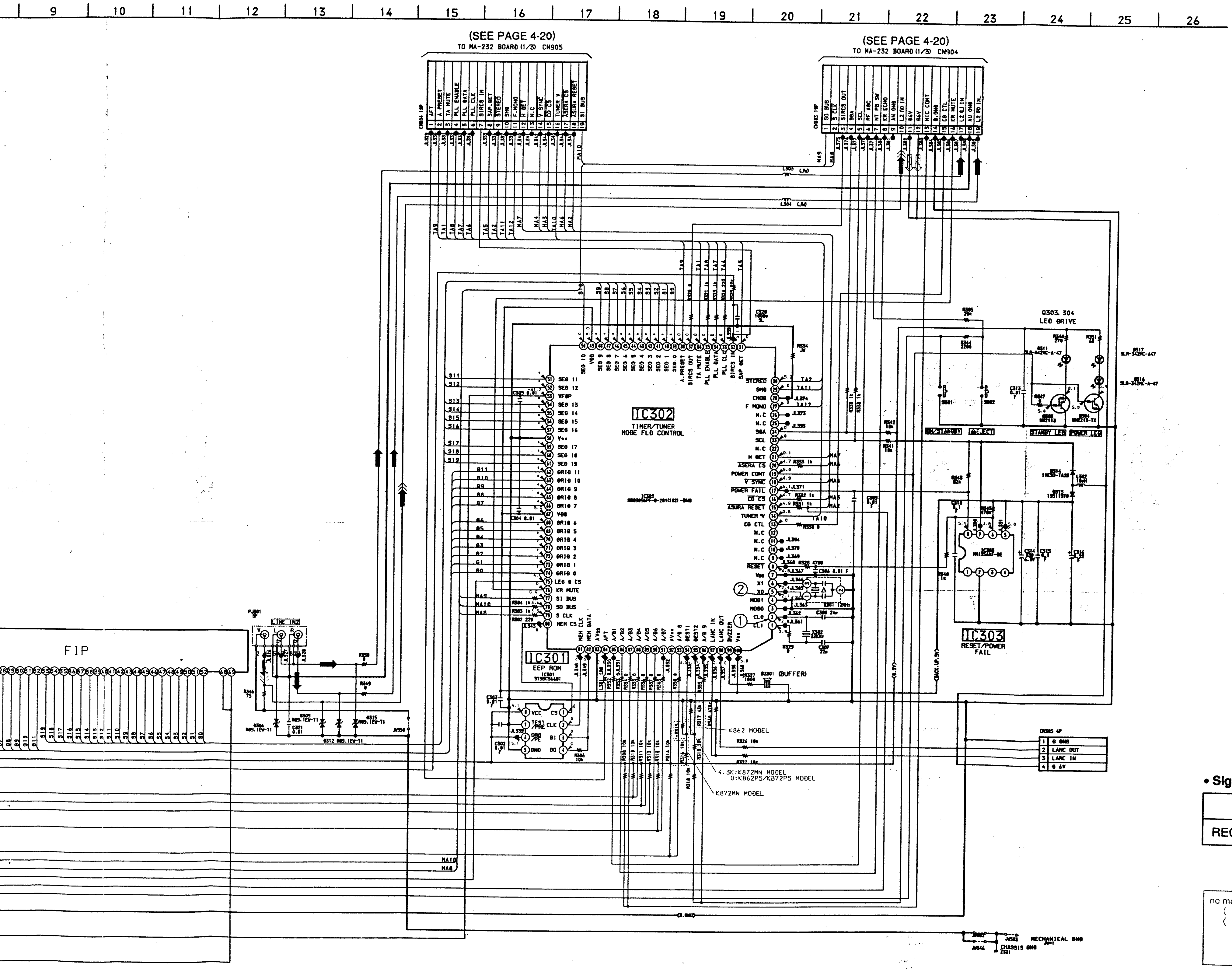


MA-242 board
(SERVO/SYSTEM
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

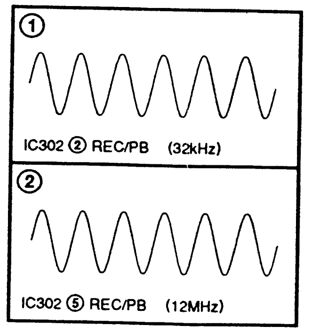
HI-17 (TIMER/TUNER/MODE CONTROL) SCHEMATIC DIAGRAM
(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. HI-17 BOARD : 3,000 series —


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
A B C D E F G H I J K L M N O
(SEE PAGE 4-20)
TO MA-232 BOARD (1/3) CN905
(SEE PAGE 4-20)
TO MA-232 BOARD (1/3) CN904
IC302
TIMER/TUNER MODE FLD CONTROL
IC301
EEP ROM
IC303
RESET/POWER FAIL
IC304
REMOCON RECEIVER
CHASSIS GND
FIP
HI-17 BOARD
(TIMER/TUNER/MODE CONTROL)
OPERATING SWITCH BLOCK
TO MF-267 BOARD CN402
(SEE PAGE 4-57)
TO MF-267 BOARD CN404
(SEE PAGE 4-57)
(BUFFER)
K862 MODEL
4.3K:K872MN MODEL
0:K862PS/K872PS MODEL
K872MN MODEL
ON/STANDBY
①
②


(SEE PAGE 4-20)
TO MA-232 BOARD (1/3) CN905
(SEE PAGE 4-20)
TO MA-232 BOARD (1/3) CN904
IC302
TIMER/TUNER MODE FLD CONTROL
IC301
EEP ROM
IC303
RESET/POWER FAIL
Q303, 304
LED DRIVE
FIP
(BUFFER)
K862 MODEL
4.3K:K872MN MODEL
0:K862PS/K872PS MODEL
K872MN MODEL
MECHANICAL GND
CHASSIS GND
ON/STANDBY
EJECT
STANDBY LED
POWER LED
CN905 4P
1 G GND
2 LANC OUT
3 LANC IN
4 G 6V

HI-17 BOARD



- **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			⇛	➡

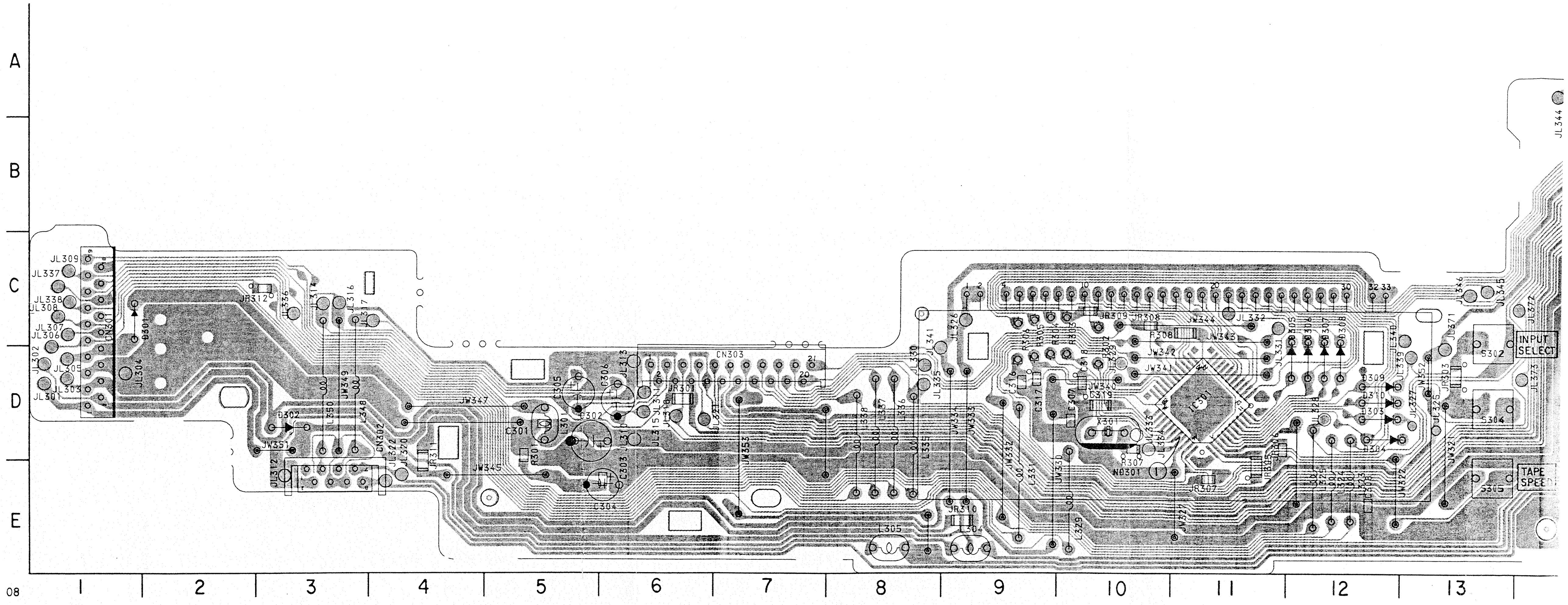
no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)
* : Impossible to measure the voltage at the marked points.

TIMER/TUNER/MODE CONTROL
HI-17

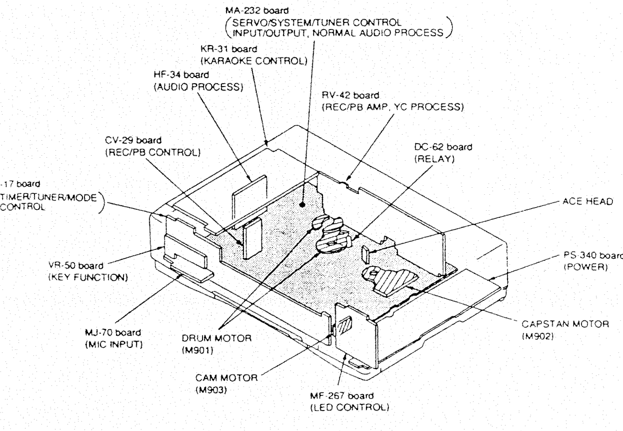
HI-18 (MODE CONTROL) PRINTED WIRING BOARD (SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. HI-18 BOARD : 4,000 series —

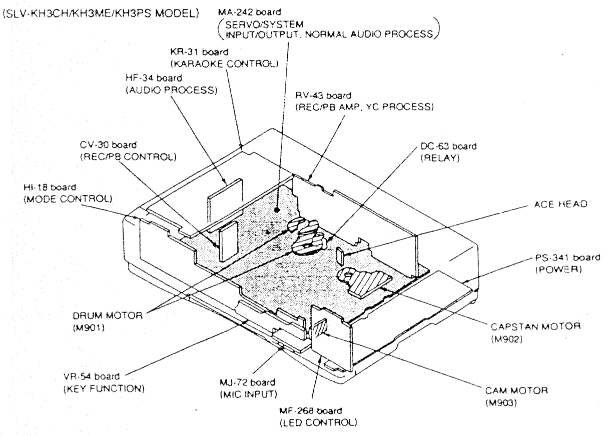
HI-18 BOARD

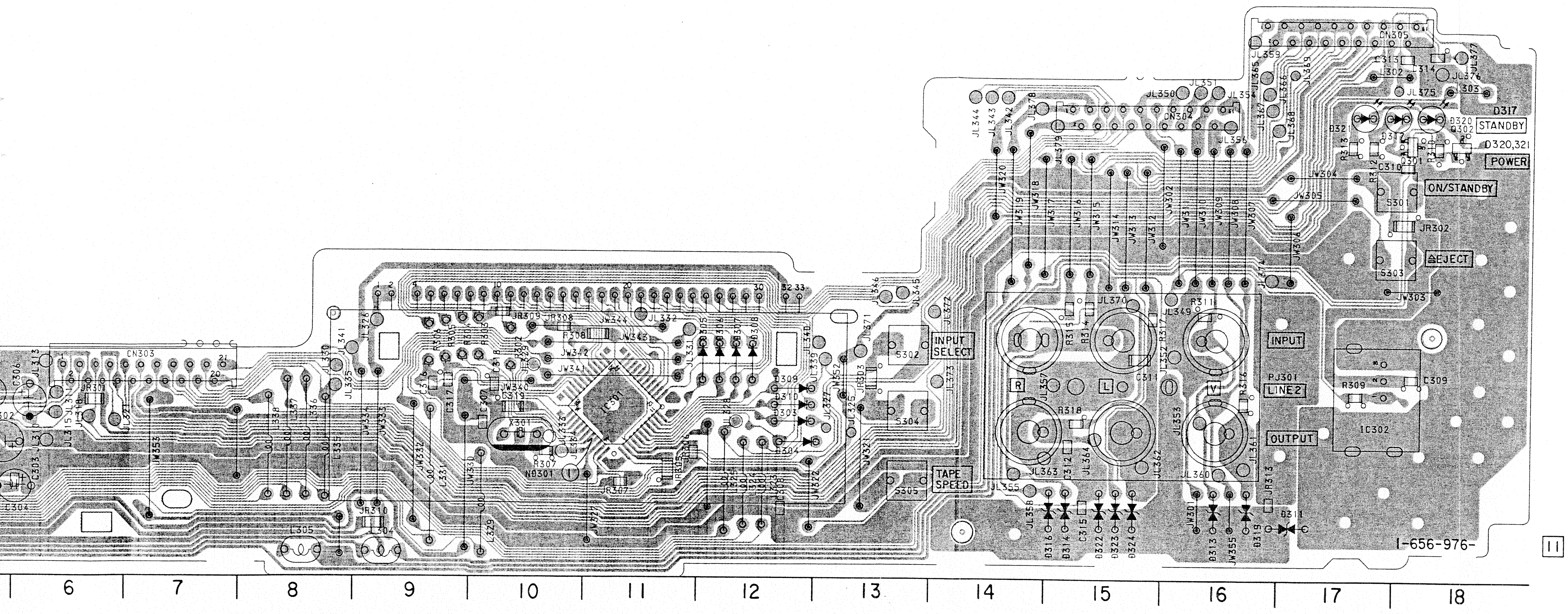

A
B
C
D
E
1
2
3
4
5
6
7
8
9
10
11
12
13
08
JL309
JL337
JL338
JL308
JL307
JL306
JL302
JL305
JL303
JL301
JL304
CN301
D301
JR312
JL336
JL314
JL316
JL317
D302
JW351
JL312
JL350
JW349
JL348
CN302
JL322
JL320
JR311
JW347
JW345
C301
L301
R301
D302
C305
C306
JL313
C303
C304
CN303
JR301
JL315
JL318
JL331
JW353
JL338
JL337
JL336
JL335
JL330
JL341
JL326
JW334
JW333
JW332
C331
JL330
JL329
L305
JR310
JL304
JR309
JR308
JW344
JW343
JL332
JW342
JW341
JW346
C318
C319
C317
C316
C307
X301
IC301
R307
ND301
JR307
D305
D306
D307
D308
D309
D310
D303
D304
JL331
JL340
JL339
JW352
JL327
JL325
JL328
JW321
JL324
JL323
JW372
JL371
JL303
S302
S304
S303
INPUT SELECT
TAPE SPEED
JL346
JL345
JL372
JL373
JL344
32
33
30
20
21
1
2

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


MA-232 board
(SERVO/SYSTEM/TUNER CONTROL
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
CAPSTAN MOTOR
(M902)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)


MA-242 board
(SERVO/SYSTEM
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

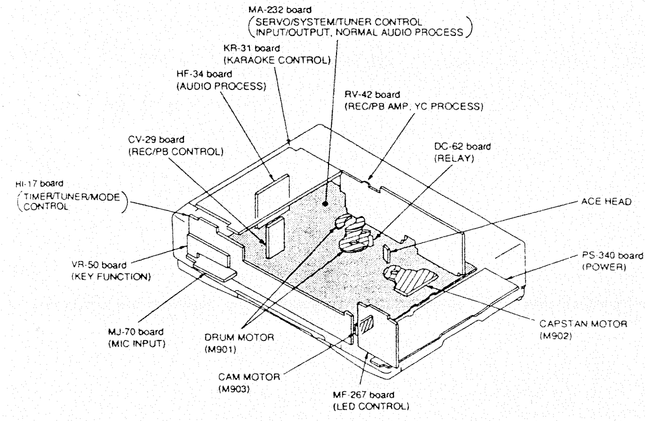

CN303
CN305
CN304
IC301
IC302
X301
PJ301
S302
S303
S304
S305
S301
INPUT SELECT
TAPE SPEED
INPUT
LINE2
OUTPUT
R
L
V
STANDBY
POWER
ON/STANDBY
EJECT
D317
D320,321
1-656-976-
11
6
7
8
9
10
11
12
13
14
15
16
17
18

HI-18 BOARD

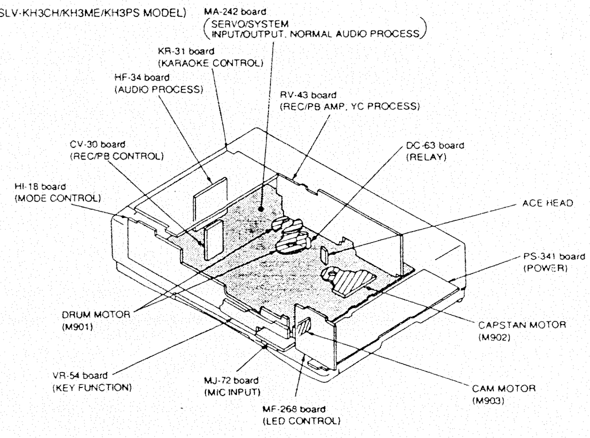
CN301	C-1
CN302	E-3
CN303	D-7
CN305	A-18
D301	C-2
D302	D-3
D303	D-12
D304	D-12
D305	C-12
D306	C-12
D307	C-12
D308	C-12
D309	D-12
D310	D-12
D313	E-16
D314	E-15
D316	E-15
D317	A-18
D319	E-16
D320	A-18
D321	A-17
D322	E-15
D323	E-15
D324	E-15
IC301	D-11
IC302	D-17
Q301	B-18
Q302	B-18

There are few cases that the part isn't mounted in this model is printed on this diagram.

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

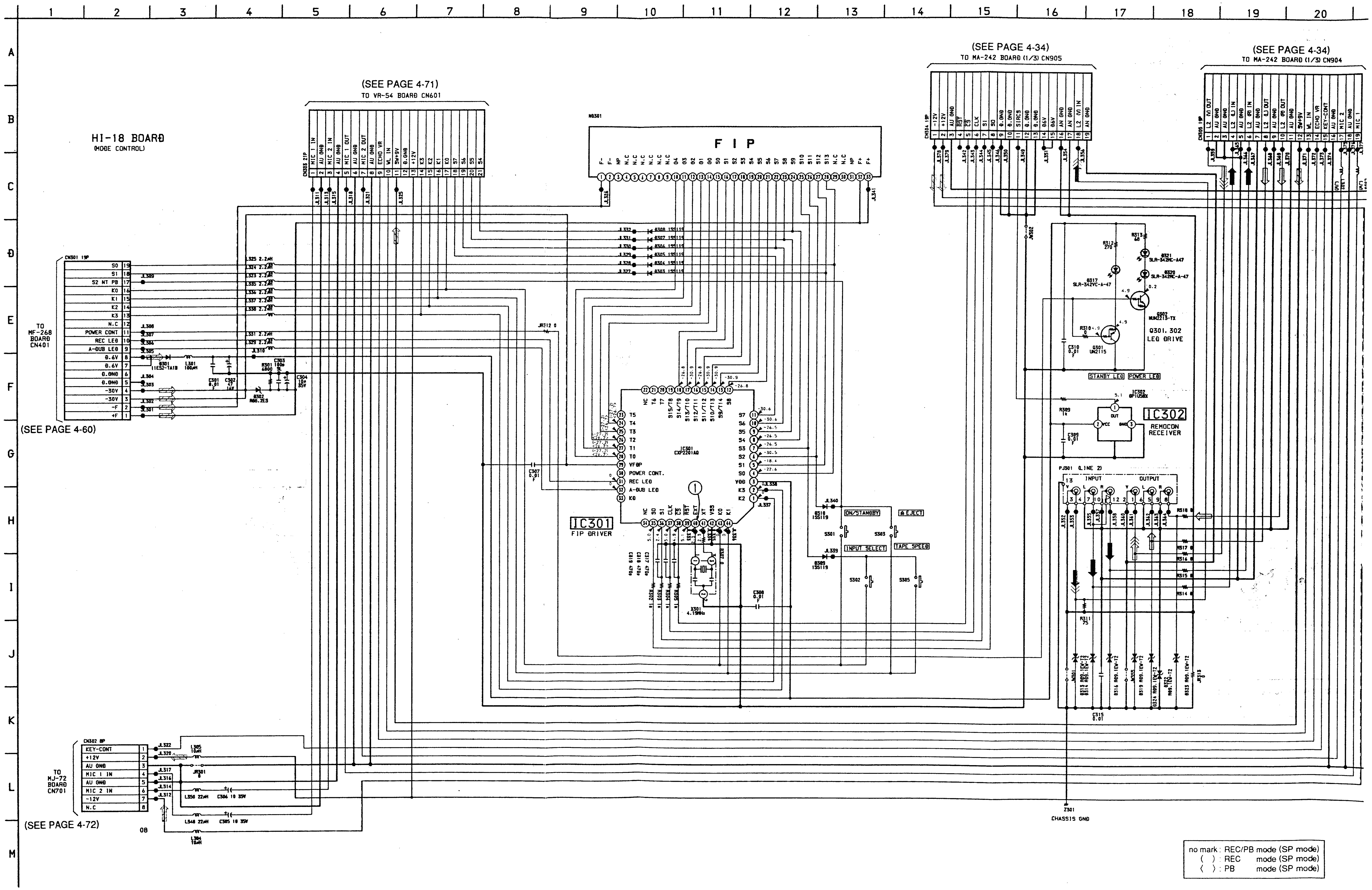

MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
CAPSTAN MOTOR
(M902)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)

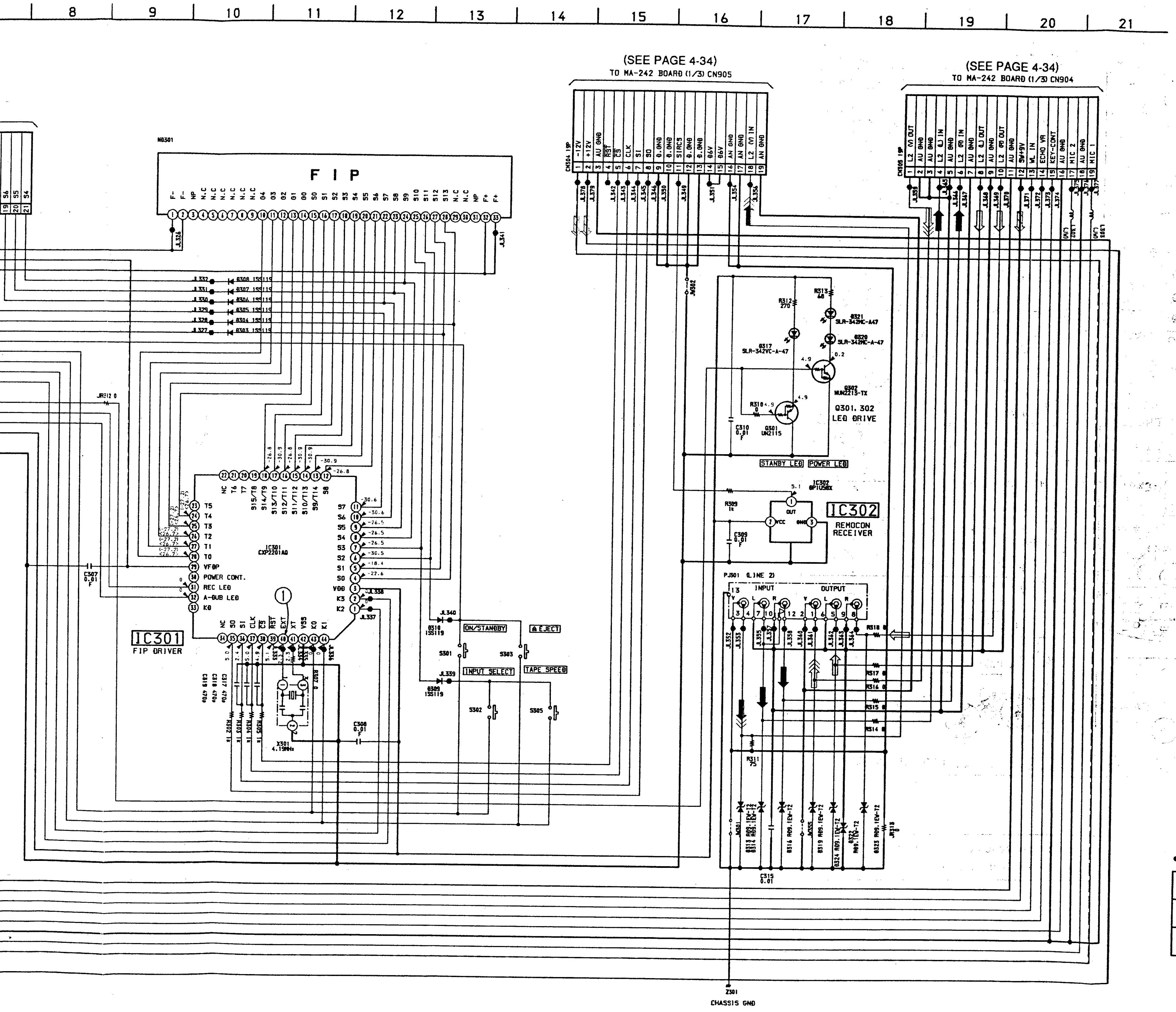

MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

HI-18 (MODE CONTROL) SCHEMATIC DIAGRAM
(SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. HI-18 BOARD : 4,000 series —


(SEE PAGE 4-71)
TO VR-54 BOARD CN601
(SEE PAGE 4-34)
TO MA-242 BOARD (1/3) CN905
(SEE PAGE 4-34)
TO MA-242 BOARD (1/3) CN904
HI-18 BOARD
(MODE CONTROL)
F I P
TO MF-268 BOARD CN401
(SEE PAGE 4-60)
TO MJ-72 BOARD CN701
(SEE PAGE 4-72)
IC301
FIP DRIVER
IC302
REMOCON RECEIVER
Q301, 302 LED DRIVE
STANDBY LED
POWER LED
ON/STANDBY
EJECT
INPUT SELECT
TAPE SPEED
J301 (LINE 2)
INPUT
OUTPUT
CHASSIS GND

no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)


8
9
10
11
12
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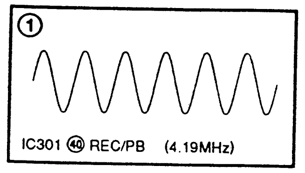
19
20
21
(SEE PAGE 4-34)
TO MA-242 BOARD (1/3) CN905
(SEE PAGE 4-34)
TO MA-242 BOARD (1/3) CN904
CN304 19P
-12V
+12V
AU GND
RST
CS
CLK
SI
SO
D.GND
STROBE
D.GND
D6V
D6V
AN GND
AN GND
L2 (V) IN
AN GND
CN305 19P
L2 (V) OUT
AU GND
AU GND
L2 (L) IN
L2 (R) IN
AU GND
L2 (L) OUT
AU GND
L2 (R) OUT
SW+9V
ML IN
ECHO VR
KEY-CONT
AU GND
MIC 2
AU GND
MIC 1
ND301
F I P
Q301, 302
LED DRIVE
Q302
UN2215-TX
Q301
UN2115
D317
SLR-342VC-A-47
D321
SLR-342MC-A47
D320
SLR-342MC-A-47
STANDBY LED
POWER LED
IC302
SBX1620-01
IC302
REMOCON RECEIVER
OUT
VCC
GND
IC301
CXP22014A
IC301
FIP DRIVER
VFDP
POWER CONT.
REC LED
A-DUB LED
K0
ON/STANDBY
EJECT
INPUT SELECT
TAPE SPEED
S301
S302
S303
S304
S305
X301
4.19MHz
PJ501 (LINE 2)
INPUT
OUTPUT
C315
0.01
Z301
CHASSIS GND

HI-18 BOARD



IC301 ㊵ REC/PB (4.19MHz)

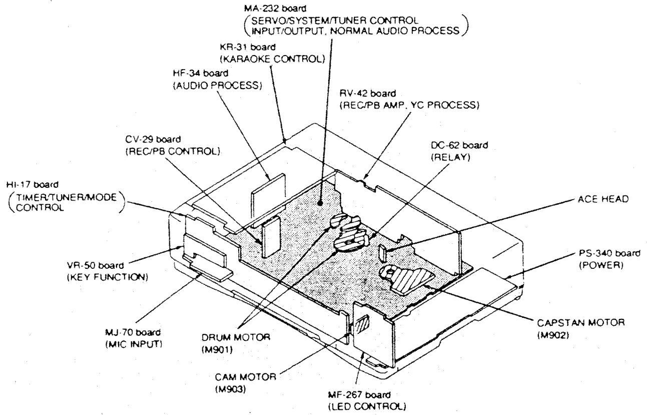
• **Signal path**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡	➡
PB			⇨	⇨

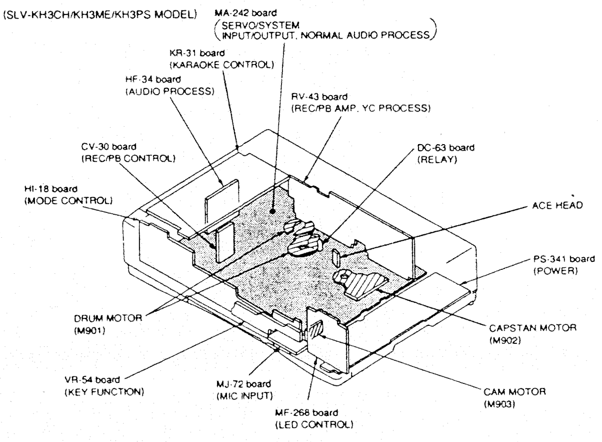
no mark : REC/PB mode (SP mode)
( ) : REC mode (SP mode)
〈 〉 : PB mode (SP mode)

MODE CONTROL
HI-18

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
PS-340 board
(POWER)
VR-50 board
(KEY FUNCTION)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

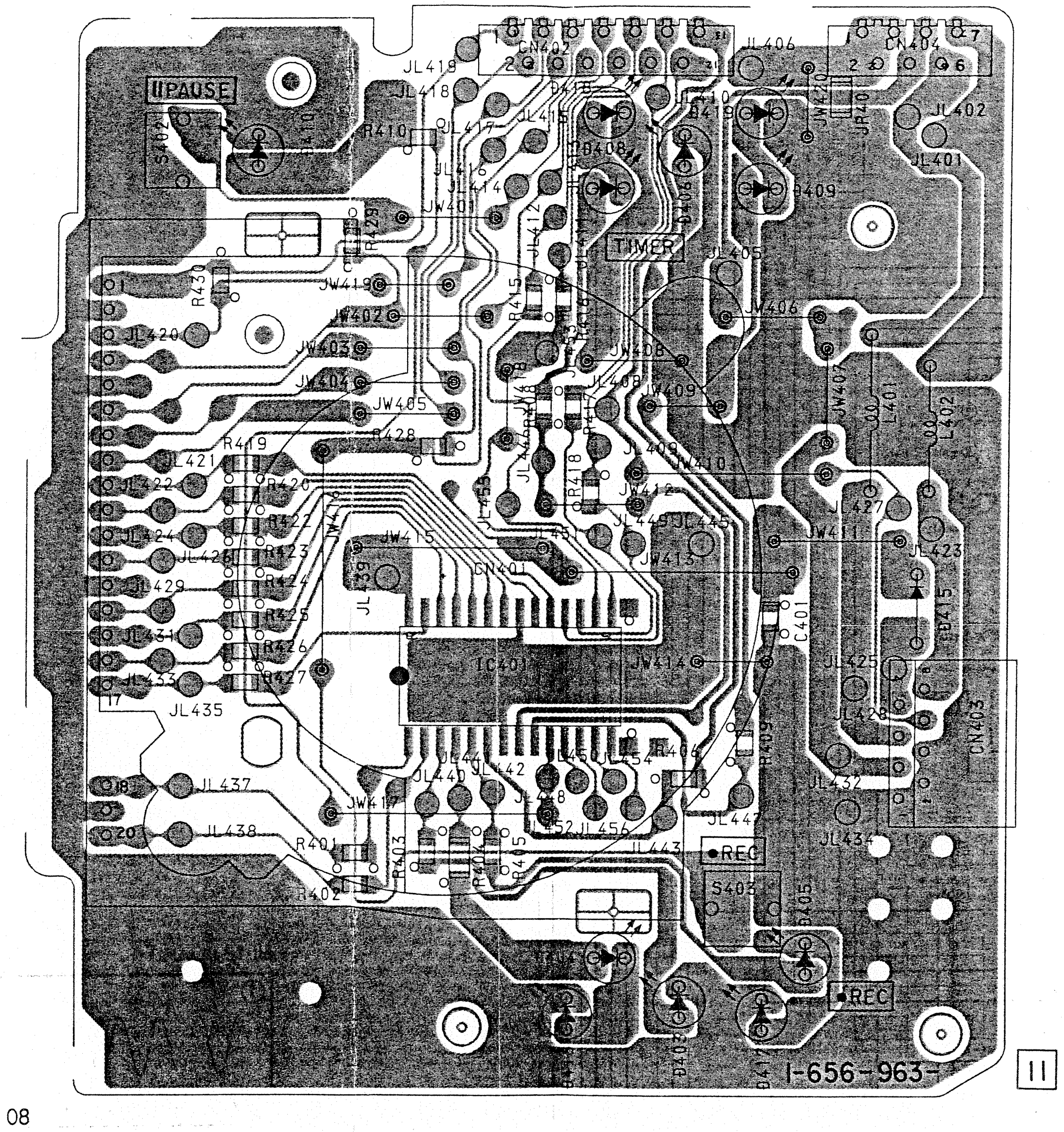
(SLV-KH3CH/KH3ME/KH3PS MODEL)


MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

MF-267 (LED CONTROL) PRINTED WIRING BOARD (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. MF-267 BOARD : 6,000 series —

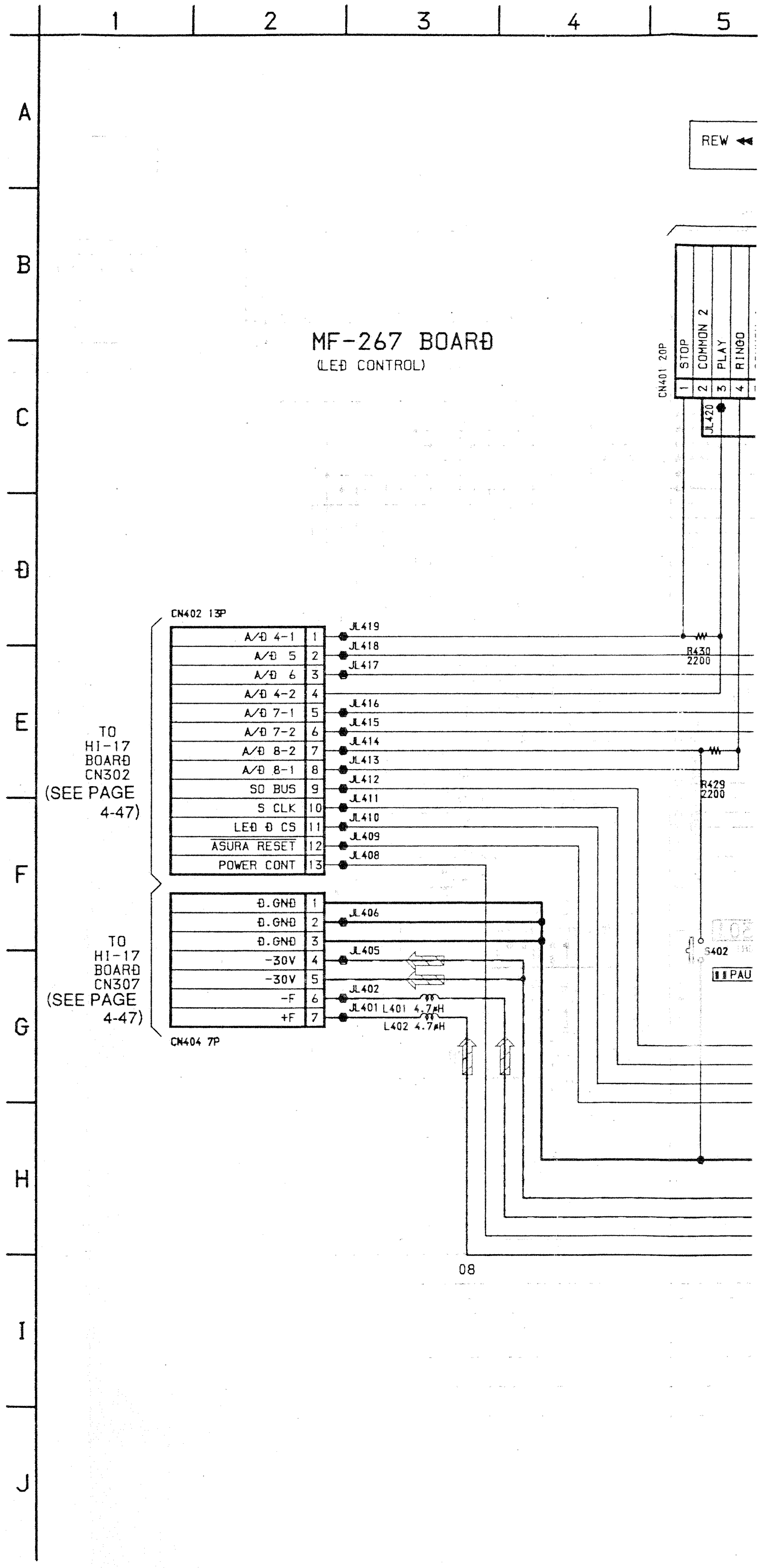
MF-267 BOARD


II PAUSE
S402
TIMER
S403
REC
CN402
CN404
CN403
CN401
IC401
C401
L401
L402
D401
D402
D405
D406
D408
D409
D410
D411
D415
D418
D419
R401
R402
R403
R410
R418
R419
R420
R422
R423
R425
R426
R427
R428
R429
R430
JL401
JL402
JL405
JL406
JL408
JL409
JL410
JL411
JL412
JL413
JL414
JL415
JL416
JL417
JL418
JL419
JL420
JL421
JL422
JL423
JL424
JL425
JL428
JL429
JL431
JL432
JL433
JL434
JL435
JL437
JL438
JL440
JL441
JL442
JL443
JL444
JL445
JL447
JL449
JL452
JL456
JW401
JW402
JW403
JW404
JW405
JW406
JW407
JW408
JW409
JW410
JW411
JW413
JW414
JW415
JW417
JW419
1-656-963-
11
08

There are few cases that the part isn't mounted in this model is printed on this diagram.

MF-267 (LED CONTROL) SCHEMATIC DIAGRAM (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

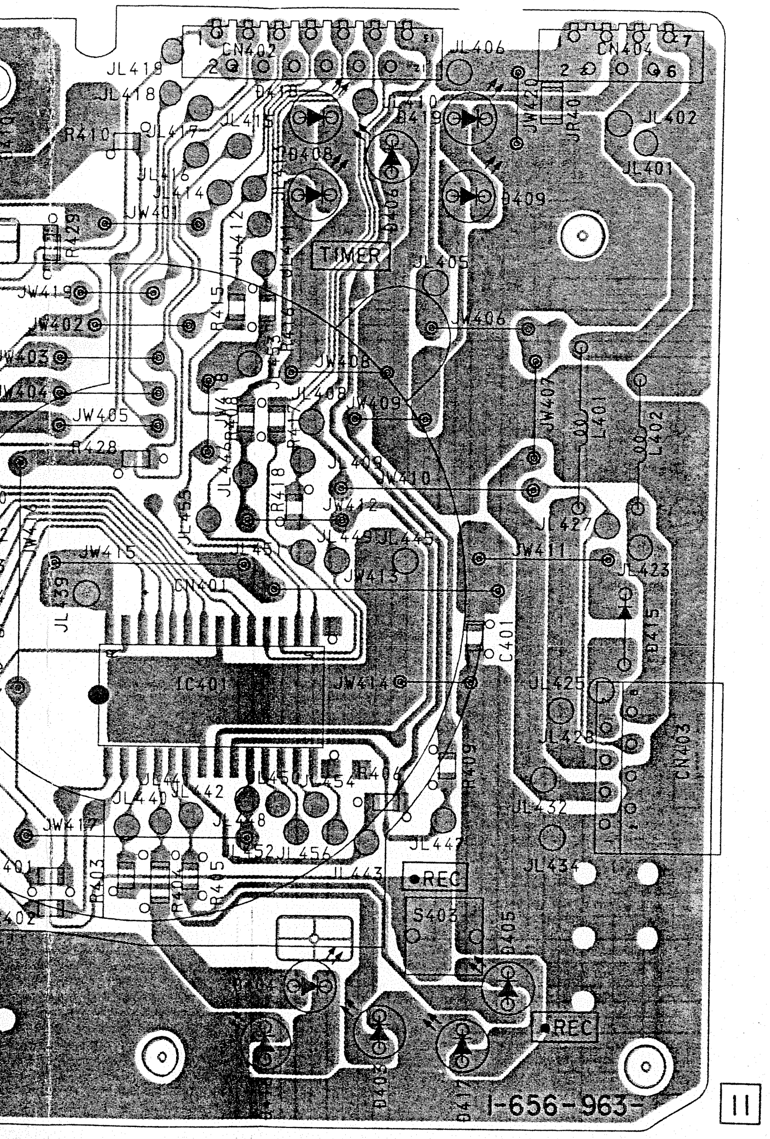
— Ref. No. MF-267 BOARD : 6,000 series —


1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
REW ◄◄
MF-267 BOARD
(LED CONTROL)
CN401 20P
1 STOP
2 COMMON 2
3 PLAY
4 RINGO
JL420
CN402 13P
A/D 4-1 1
A/D 5 2
A/D 6 3
A/D 4-2 4
A/D 7-1 5
A/D 7-2 6
A/D 8-2 7
A/D 8-1 8
SO BUS 9
S CLK 10
LED D CS 11
ASURA RESET 12
POWER CONT 13
JL419
JL418
JL417
JL416
JL415
JL414
JL413
JL412
JL411
JL410
JL409
JL408
R430
2200
R429
2200
TO
HI-17
BOARD
CN302
(SEE PAGE
4-47)
D.GND 1
D.GND 2
D.GND 3
-30V 4
-30V 5
-F 6
+F 7
JL406
JL405
JL402
JL401 L401 4.7µH
L402 4.7µH
TO
HI-17
BOARD
CN307
(SEE PAGE
4-47)
CN404 7P
S402
II PAU
08

OL) PRINTED WIRING BOARD
/K872MN/K872PS MODEL)

RD : 6,000 series —

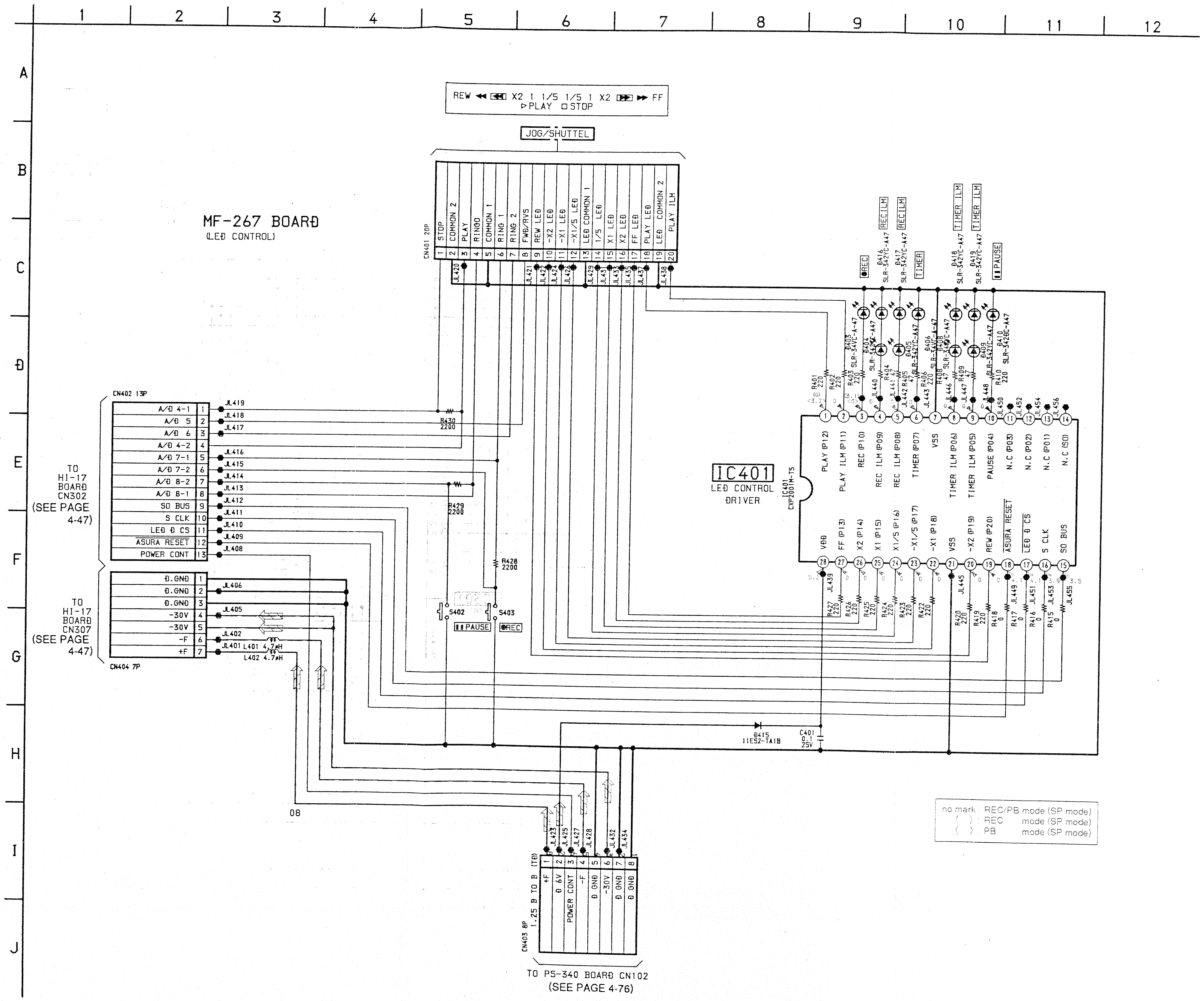
RD


JL418
CN402
JL406
CN404
R410
JL417
D408
TIMER
D409
JL402
JL401
JW418
JW402
JW403
JW404
JW405
R428
R415
R418
JW409
JW410
JW407
L401
L402
JW415
JW412
JL445
JW413
JW411
R427
D415
JL423
C401
IC401
JW414
JL425
JL428
CN403
JW417
JL447
JL432
JL443
REC
S403
JL434
D405
D403
REC
1-656-963-
11

There are few cases that the part isn't mounted in this model is printed on this diagram.

MF-267 (LED CONTROL) SCHEMATIC DIAGRAM
(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. MF-267 BOARD : 6,000 series —

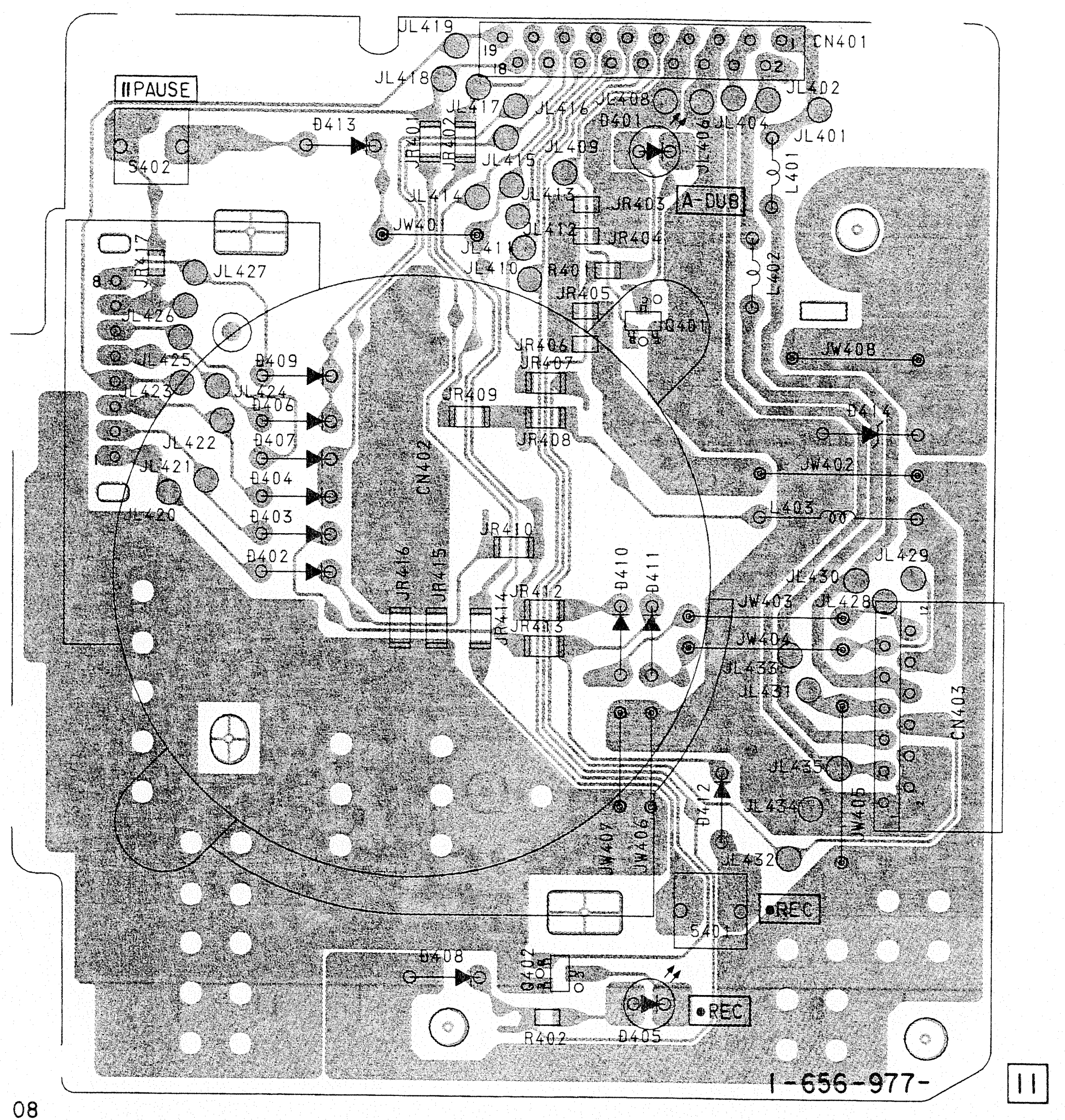

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
REW ◀◀ X2 1 1/5 1/5 1 X2 ▶▶ FF
▷PLAY □STOP
JOG/SHUTTEL
MF-267 BOARD
(LED CONTROL)
CN401 20P
1 STOP
2 COMMON 2
3 PLAY
4 RINGO
5 COMMON 1
6 RING 1
7 RING 2
8 FWD/RVS
9 REW LED
10 -X2 LED
11 -X1 LED
12 -X1/5 LED
13 LED COMMON 1
14 1/5 LED
15 X1 LED
16 X2 LED
17 FF LED
18 PLAY LED
19 LED COMMON 2
20 PLAY ILM
CN402 13P
A/D 4-1
A/D 5
A/D 6
A/D 4-2
A/D 7-1
A/D 7-2
A/D 8-2
A/D 8-1
SO BUS
S CLK
LED D CS
ASURA RESET
POWER CONT
TO HI-17 BOARD CN302 (SEE PAGE 4-47)
D.GND
D.GND
D.GND
-30V
-30V
-F
+F
TO HI-17 BOARD CN307 (SEE PAGE 4-47)
CN404 7P
L401 4.7μH
L402 4.7μH
R430 2200
R429 2200
R428 2200
S402
S403
II PAUSE
●REC
IC401
LED CONTROL DRIVER
CXP20014H-T5
PLAY (P12)
PLAY ILM (P11)
REC (P10)
REC ILM (P09)
REC ILM (P08)
TIMER (P07)
VSS
TIMER ILM (P06)
TIMER ILM (P05)
PAUSE (P04)
N.C (P03)
N.C (P02)
N.C (P01)
N.C (SO)
VDD
FF (P13)
X2 (P14)
X1 (P15)
X1/5 (P16)
-X1/5 (P17)
-X1 (P18)
VSS
-X2 (P19)
REW (P20)
ASURA RESET
LED D CS
S CLK
SO BUS
REC ILM
TIMER ILM
●REC
TIMER
II PAUSE
SLR-342YC-A47
SLR-342DC-A47
D415 11ES2-TA1B
C401 0.1 25V
08
CN403 8P 1.25 D TO B (TO)
+F
D 6V
POWER CONT
-F
D GND
-30V
D GND
D GND
TO PS-340 BOARD CN102 (SEE PAGE 4-76)

no mark REC/PB mode (SP mode)
( ) REC mode (SP mode)
〈 〉 PB mode (SP mode)

MF-268 (LED CONTROL) PRINTED WIRING BOARD (SLV-KH3CH/KH3ME/KH3PS MODEL)

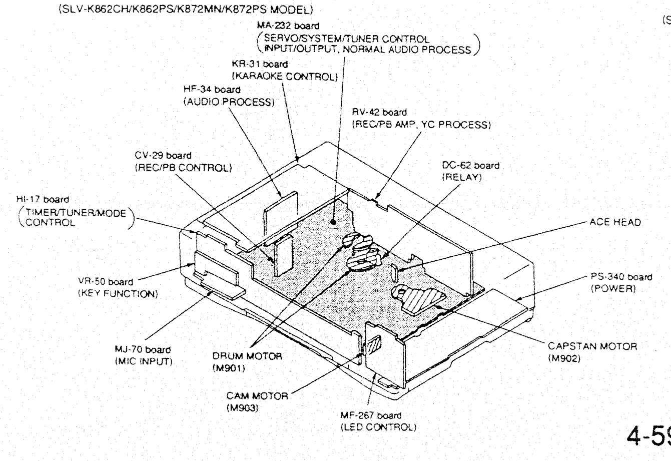
— Ref. No. MF-268 BOARD : 7,000 series —

MF-268 BOARD

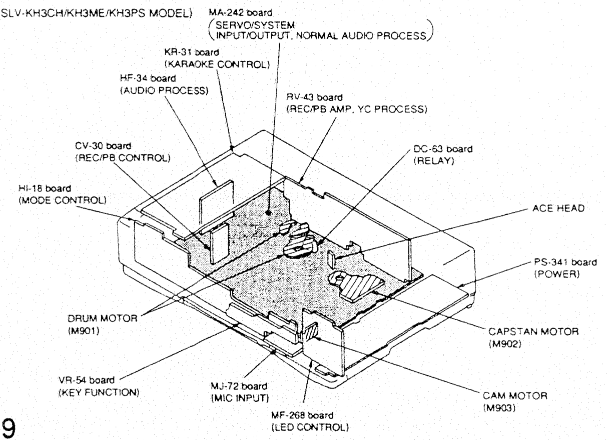

CN401
JL419
JL418
II PAUSE
S402
D413
JL417
JL416
JL408
D401
JL404
JL402
JL401
JL415
JL409
L401
JL414
JL413
JR403
A-DUB
JW401
JL412
JR404
JL411
JL410
R401
L402
JL427
JR405
Q401
JL426
JW408
JL425
D409
JL424
JR406
JR407
JL423
D406
JR409
D414
JL422
D407
CN402
JR408
JW402
JL421
D404
JL420
D403
JL403
JR410
JL430
JL429
D402
JR416
JR415
D410
D411
JR412
JR414
JR413
JW403
JL428
JW404
JL433
JL431
CN403
JL435
D412
JL434
JW407
JW406
JW405
JL432
S401
●REC
D408
Q402
R402
D405
08
1-656-977-
11

There are few cases that the part isn't mounted in this model is printed on this diagram.

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)

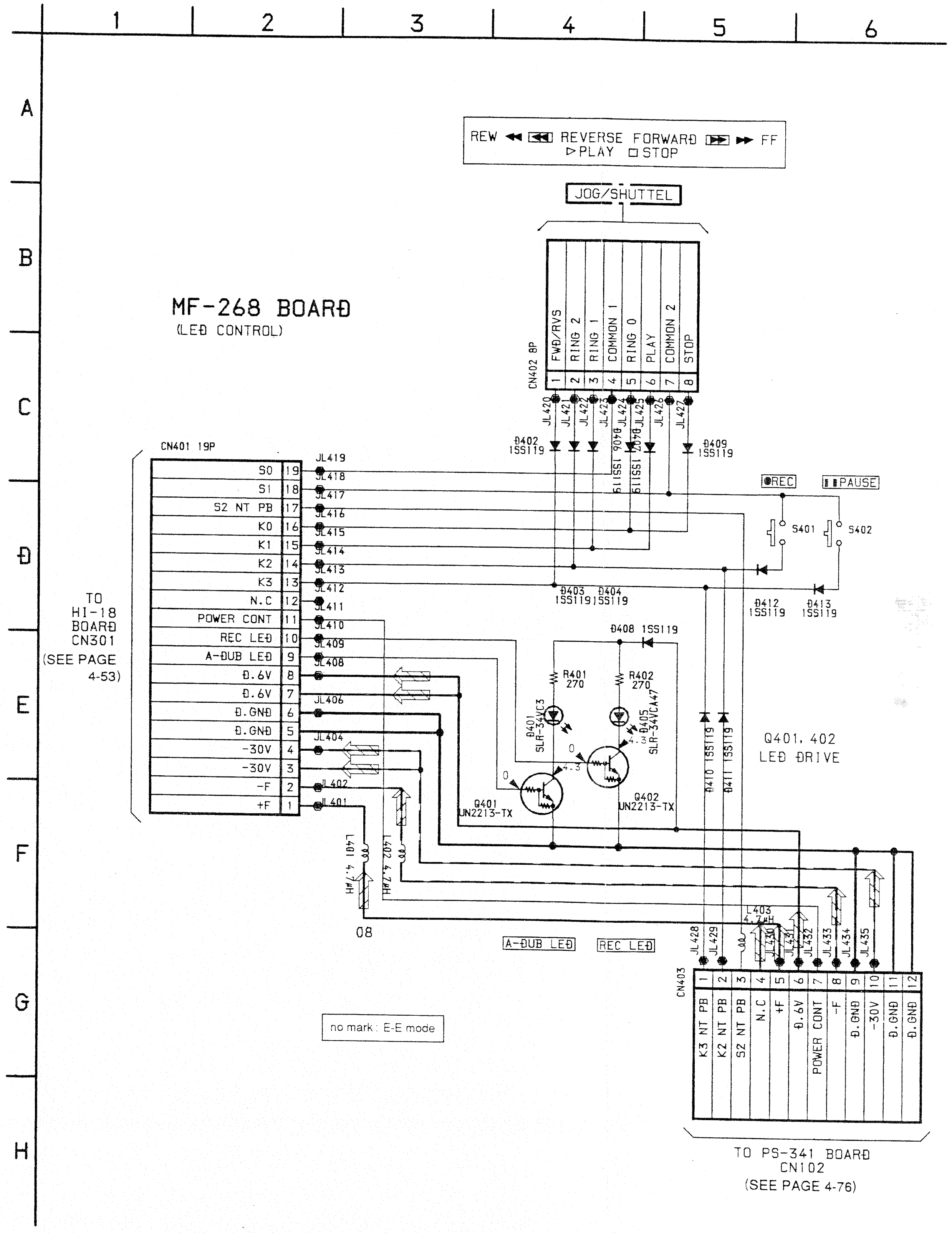

MA-232 board (SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board (KARAOKE CONTROL)
HF-34 board (AUDIO PROCESS)
RV-42 board (REC/PB AMP, YC PROCESS)
CV-29 board (REC/PB CONTROL)
DC-62 board (RELAY)
HI-17 board (TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board (KEY FUNCTION)
PS-340 board (POWER)
MJ-70 board (MIC INPUT)
DRUM MOTOR (M901)
CAPSTAN MOTOR (M902)
CAM MOTOR (M903)
MF-267 board (LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)


MA-242 board (SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board (KARAOKE CONTROL)
HF-34 board (AUDIO PROCESS)
RV-43 board (REC/PB AMP, YC PROCESS)
CV-30 board (REC/PB CONTROL)
DC-63 board (RELAY)
HI-18 board (MODE CONTROL)
ACE HEAD
PS-341 board (POWER)
DRUM MOTOR (M901)
CAPSTAN MOTOR (M902)
VR-54 board (KEY FUNCTION)
MJ-72 board (MIC INPUT)
MF-268 board (LED CONTROL)
CAM MOTOR (M903)

MF-268 (LED CONTROL) SCHEMATIC DIAGRAM (SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. MF-268 BOARD : 7,000 series —

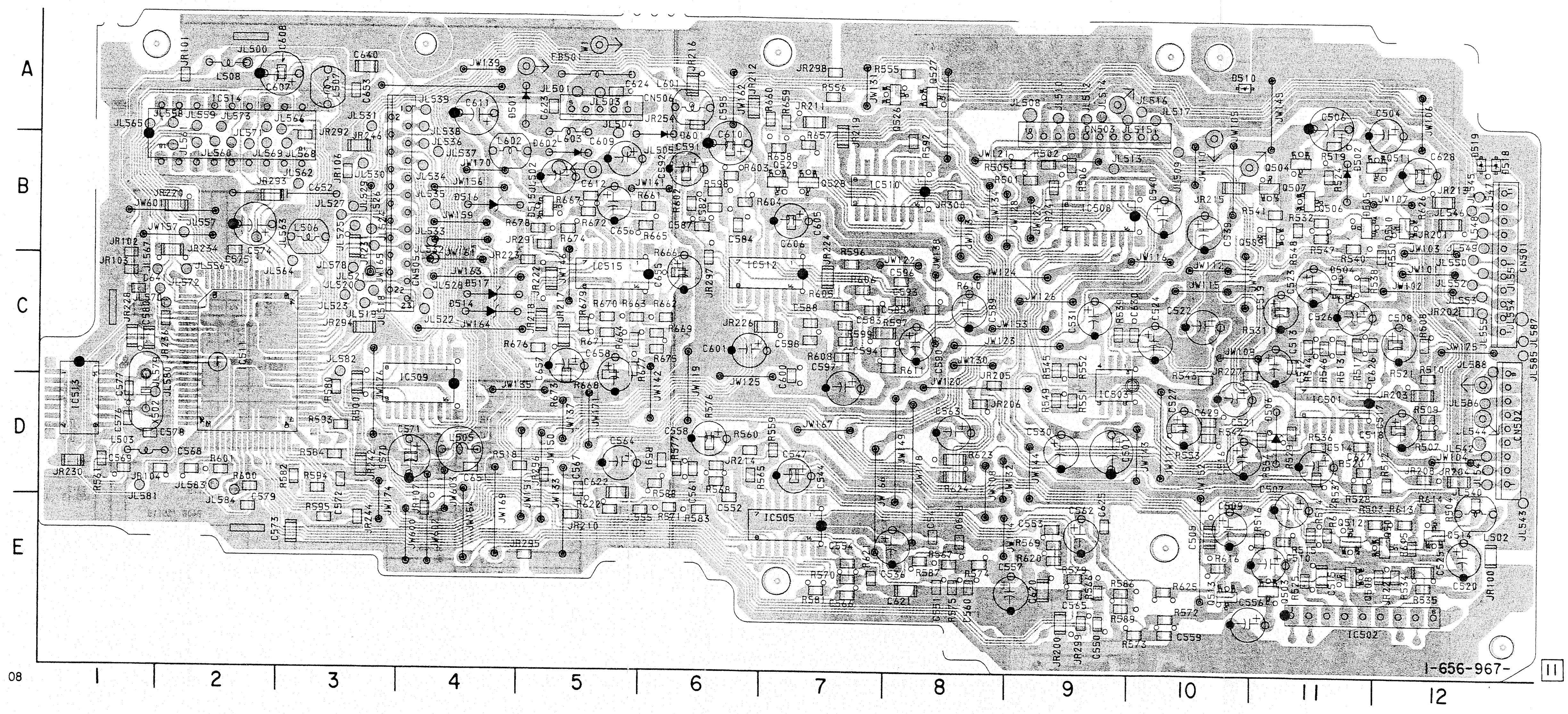

1
2
3
4
5
6
A
B
C
D
E
F
G
H
REW ◀◀ REVERSE FORWARD ▶▶ FF
▷PLAY □STOP
JOG/SHUTTEL
MF-268 BOARD
(LED CONTROL)
CN402 8P
1 FWD/RVS
2 RING 2
3 RING 1
4 COMMON 1
5 RING 0
6 PLAY
7 COMMON 2
8 STOP
JL420
JL421
JL422
JL423
JL424
JL425
JL426
JL427
D402 1SS119
D406 1SS119
D407 1SS119
D409 1SS119
CN401 19P
S0 19
S1 18
S2 NT PB 17
K0 16
K1 15
K2 14
K3 13
N.C 12
POWER CONT 11
REC LED 10
A-DUB LED 9
D.6V 8
D.6V 7
D.GND 6
D.GND 5
-30V 4
-30V 3
-F 2
+F 1
JL419
JL418
JL417
JL416
JL415
JL414
JL413
JL412
JL411
JL410
JL409
JL408
JL406
JL404
JL402
JL401
TO HI-18 BOARD CN301 (SEE PAGE 4-53)
●REC
II PAUSE
S401
S402
D403 1SS119
D404 1SS119
D412 1SS119
D413 1SS119
D408 1SS119
R401 270
R402 270
D401 SLR-343VC3
D405 SLR-343CA47
Q401 UN2213-TX
Q402 UN2213-TX
D410 1SS119
D411 1SS119
Q401, 402 LED DRIVE
L401 4.7µH
L402 4.7µH
L403 4.7µH
08
A-DUB LED
REC LED
JL428
JL429
JL430
JL431
JL432
JL433
JL434
JL435
CN403
1 K3 NT PB
2 K2 NT PB
3 S2 NT PB
4 N.C
5 +F
6 -F
7 POWER CONT
8 D.6V
9 D.GND
10 -30V
11 D.GND
12 D.GND
no mark : E-E mode
TO PS-341 BOARD CN102 (SEE PAGE 4-76)

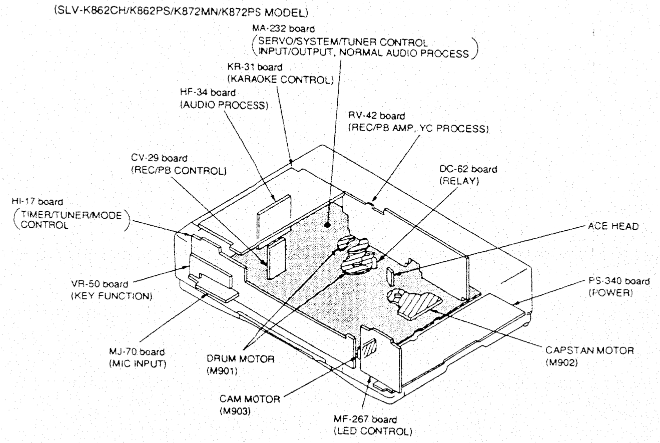
KR-31 (KARAOKE CONTROL) PRINTED WIRING BOARD

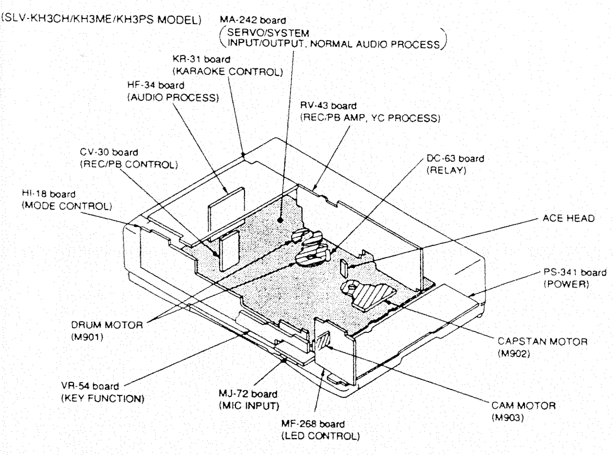
— Ref. No. KR-31 BOARD : 5,000 series —

KR-31 BOARD	
CN501	B-12
CN503	A-9
CN505	C-4
CN506	A-5
D501	A-5
D502	B-11
D504	C-11
D505	B-11
D506	D-11
D514	C-4
D515	B-5
D516	B-4
D517	C-4
D518	B-12
D519	B-12
D601	A-6
D602	B-5
IC501	D-11
IC502	E-11
IC503	D-9
IC505	E-7
IC508	B-9
IC509	D-4
IC510	B-7
IC511	C-2
IC512	C-6
IC513	D-1
IC514	A-2
IC515	C-5
Q501	E-12
Q503	E-11
Q504	B-11
Q506	B-11
Q507	B-11
Q508	E-11
Q509	B-11
Q510	B-12
Q511	B-12
Q512	E-11
Q513	E-10
Q514	E-12
Q526	A-8
Q527	A-8
Q528	B-7
Q529	B-7

KR-31 BOARD


A
B
C
D
E
08
1
2
3
4
5
6
7
8
9
10
11
12
1-656-967-
11
IC501
IC502
IC503
IC505
IC508
IC509
IC510
IC511
IC512
IC513
IC514
IC515
CN501
CN503
CN505
CN506

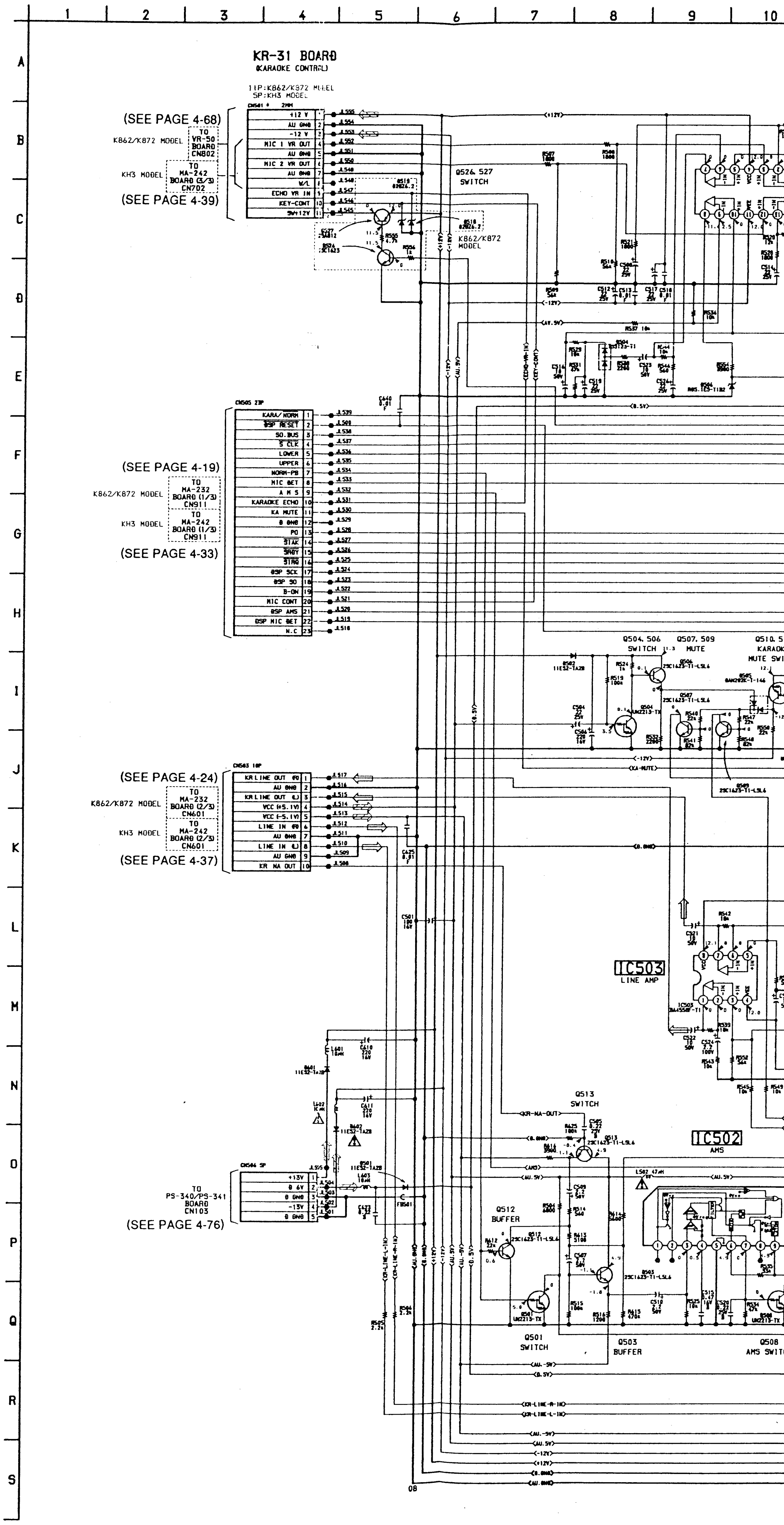

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)
MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)


(SLV-KH3CH/KH3ME/KH3PS MODEL)
MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

There are few cases that the part isn't mounted in this model is printed on this diagram.

KR-31 (KARAOKE CONTROL) SCHEMATIC DIAGRAM

— Ref. No. KR-31 BOARD : 5,000 series —


1
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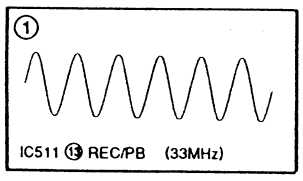
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
KR-31 BOARD
(KARAOKE CONTROL)
(SEE PAGE 4-68)
K862/K872 MODEL
TO VR-50 BOARD CN802
KH3 MODEL
TO MA-242 BOARD (3/3) CN702
(SEE PAGE 4-39)
Q524, 527 SWITCH
K862/K872 MODEL
(SEE PAGE 4-19)
TO MA-232 BOARD (1/3) CN911
TO MA-242 BOARD (1/3) CN911
(SEE PAGE 4-33)
Q504, 506 SWITCH
Q507, 509 MUTE
KARAOKE MUTE SWITCH
(SEE PAGE 4-24)
TO MA-232 BOARD (2/3) CN601
TO MA-242 BOARD (2/3) CN601
(SEE PAGE 4-37)
IC503 LINE AMP
Q513 SWITCH
IC502 AMS
TO PS-340/PS-341 BOARD CN103
(SEE PAGE 4-76)
Q512 BUFFER
Q501 SWITCH
Q503 BUFFER
Q508 AMS SWITCH

KR-31 BOARD

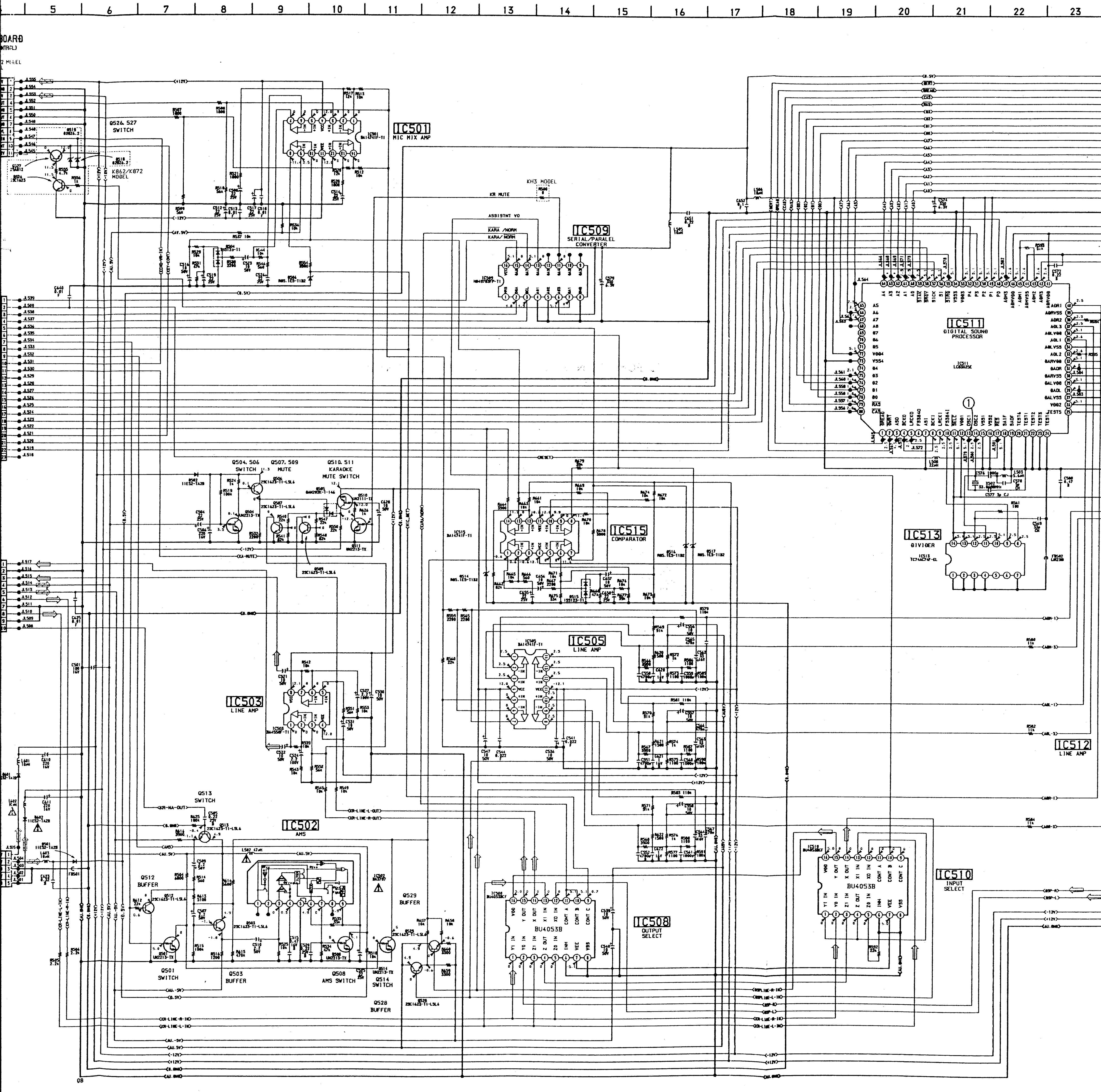


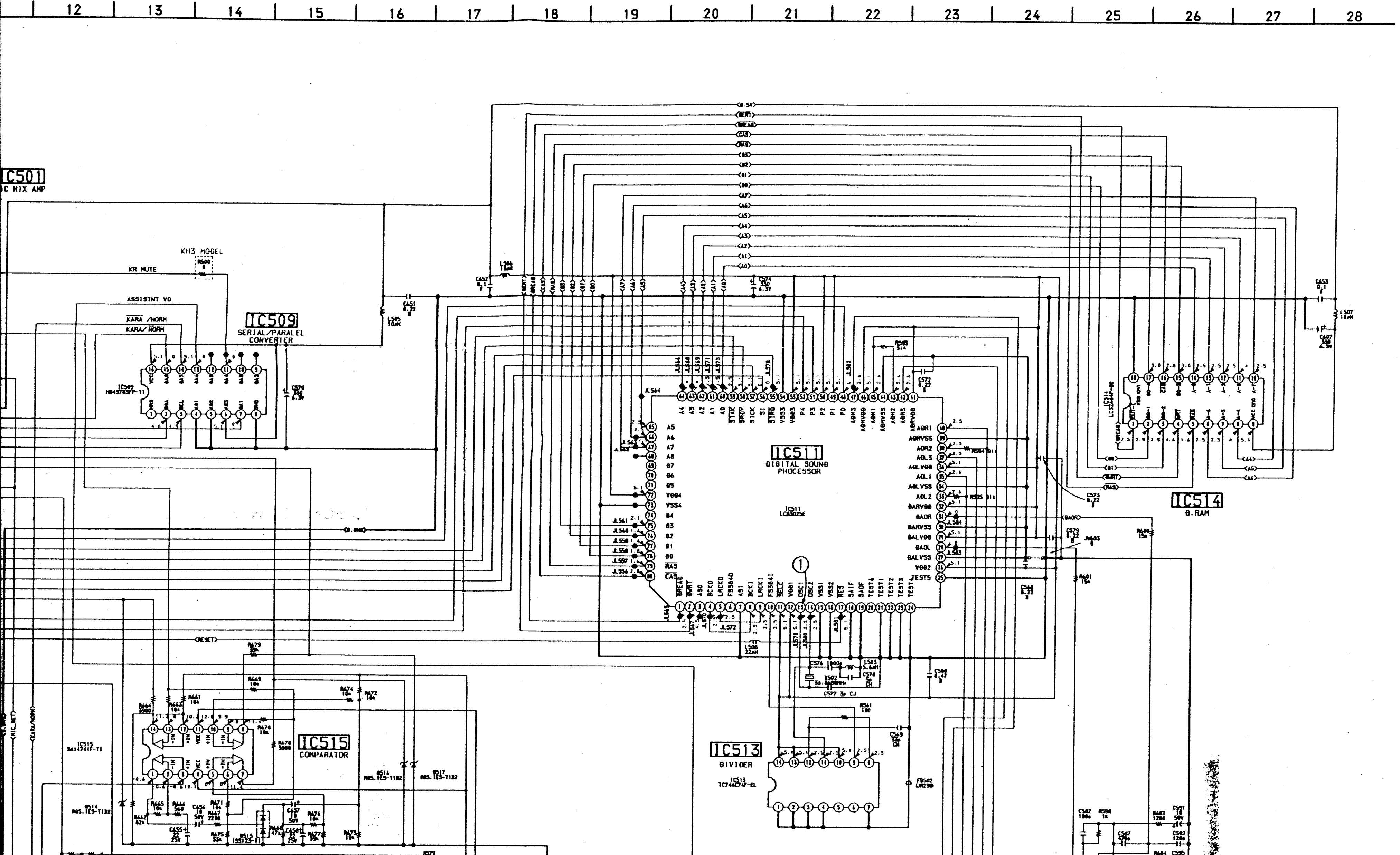
• Signal path

	AUDIO Signal
PB	⇨

HEMATIC DIAGRAM

ries —


5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
BOARD
Q526, 527 SWITCH
K862/K872 MODEL
IC501
MIC MIX AMP
KH3 MODEL
KR MUTE
ASSISTNT VO
KARA/NORM
IC509
SERIAL/PARALEL CONVERTER
IC511
DIGITAL SOUND PROCESSOR
Q504, 506 SWITCH
Q507, 509 MUTE
Q510, 511 KARAOKE MUTE SWITCH
IC515
COMPARATOR
IC513
DIVIDER
IC505
LINE AMP
IC503
LINE AMP
IC512
LINE AMP
Q513 SWITCH
IC502
AMS
Q512 BUFFER
Q501 SWITCH
Q503 BUFFER
Q508 AMS SWITCH
Q514 SWITCH
Q529 BUFFER
Q528 BUFFER
IC508
BU4053B
OUTPUT SELECT
IC510
BU4053B
INPUT SELECT


12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
C501
C MIX AMP
KH3 MODEL
KR MUTE
ASSISTANT VO
IC509
SERIAL/PARALEL CONVERTER
IC511
DIGITAL SOUND PROCESSOR
IC514
B.RAM
IC515
COMPARATOR
IC513
DIVIDER
IC505
LINE AMP
IC512
LINE AMP
IC510
INPUT SELECT
BU4053B
IC508
OUTPUT SELECT
BU4053B
Q529
BUFFER

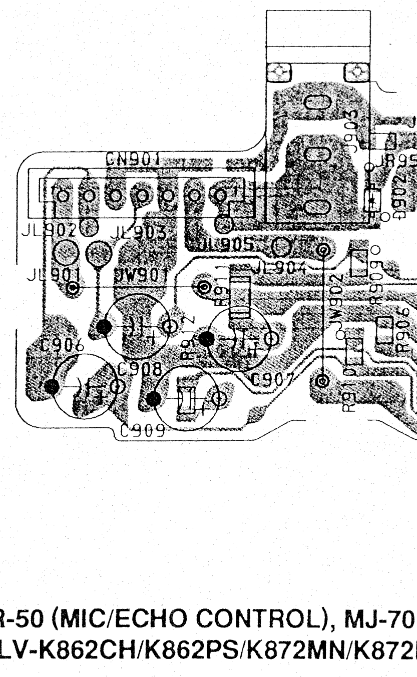
no mark E-E mode
* Impossible to measure the voltage at the marked points

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

VR-50 (MIC/ECHO CONTROL), MJ-70
(SLV-K862CH/K862PS/K872MN/K872

— Ref. No. VR-50 BOARD : 9,000 series,

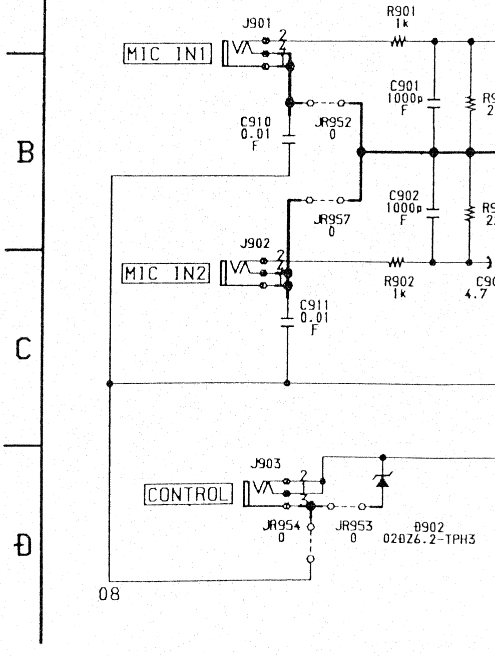
MJ-70 BOARD

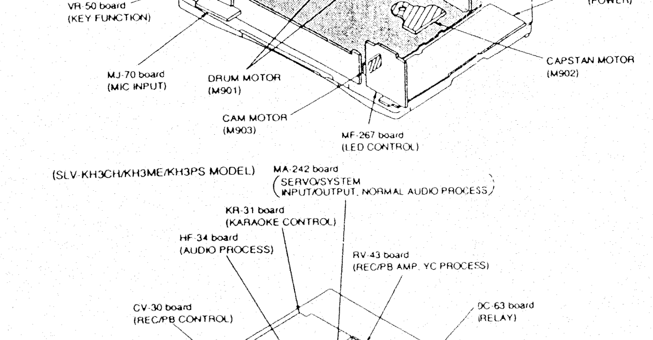

CONTROL
CN901
JL902
JL903
JL905
JL901
JW901
JL904
J903
JR95
D902
R911
R912
JW902
R909
R906
R91
C906
C908
C907
C909
08

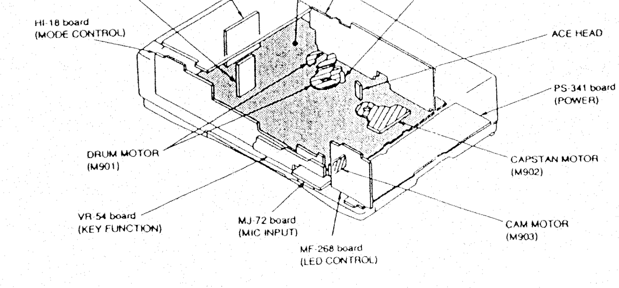
There are few cases that the part isn't mounted in this model is printed on this diagram.

VR-50 (MIC/ECHO CONTROL), MJ-70
(SLV-K862CH/K862PS/K872MN/K872

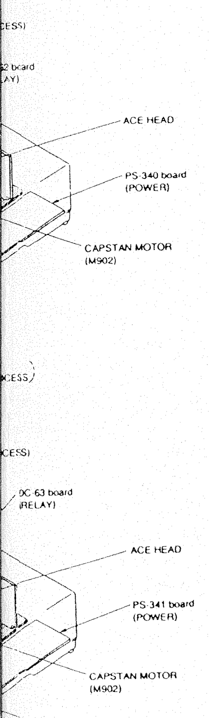
— Ref. No. VR-50 BOARD : 9,000 series,


1
2
A
B
C
D
MJ-70 BOARD
(MIC INPUT)
J901
MIC IN1
R901
1k
C901
1000p
F
C910
0.01
F
JR952
0
C902
1000p
F
JR957
0
J902
MIC IN2
R902
1k
C911
0.01
F
J903
CONTROL
JR954
0
JR953
0
D902
02DZ6.2-TPH3
08


(SLV-K862CH/K862PS/K872MN/K872PS MODEL)
MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
PS-340 board
(POWER)
VR-50 board
(KEY FUNCTION)
CAPSTAN MOTOR
(M902)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)


(SLV-KH3CH/KH3ME/KH3PS MODEL)
MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

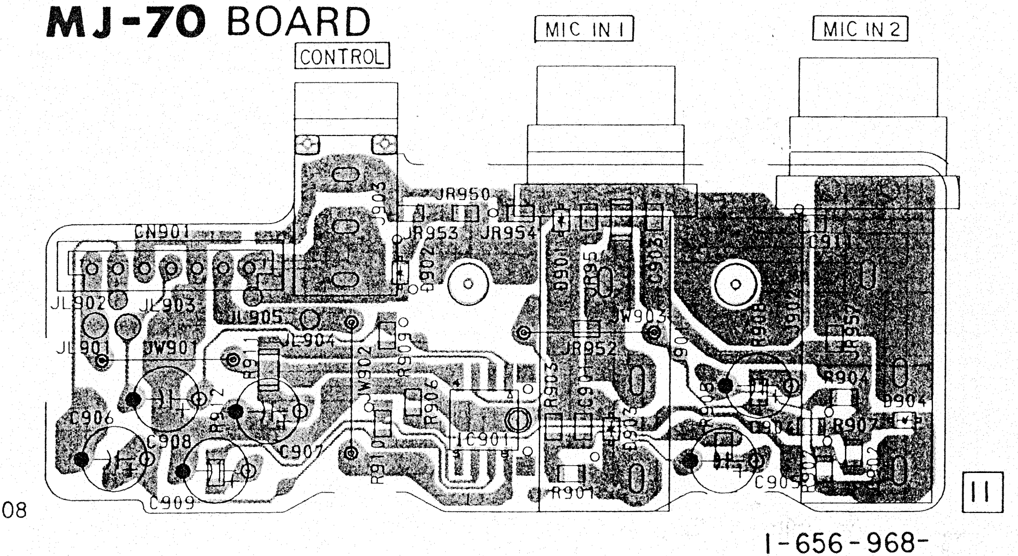
e part isn't mounted
n this diagram.



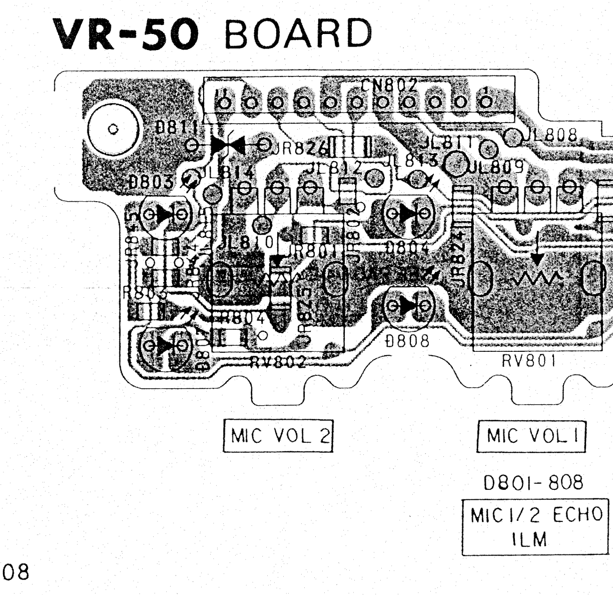
s)
CESS)
2 board
AY)
ACE HEAD
PS-340 board (POWER)
CAPSTAN MOTOR (M902)
CESS)
CESS)
DC-63 board (RELAY)
ACE HEAD
PS-341 board (POWER)
CAPSTAN MOTOR (M902)
CAM MOTOR (M903)

VR-50 (MIC/ECHO CONTROL), MJ-70 (MIC INPUT) PRINTED WIRING BOARD (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

— Ref. No. VR-50 BOARD : 9,000 series, MJ-70 BOARD : 7,000 series —



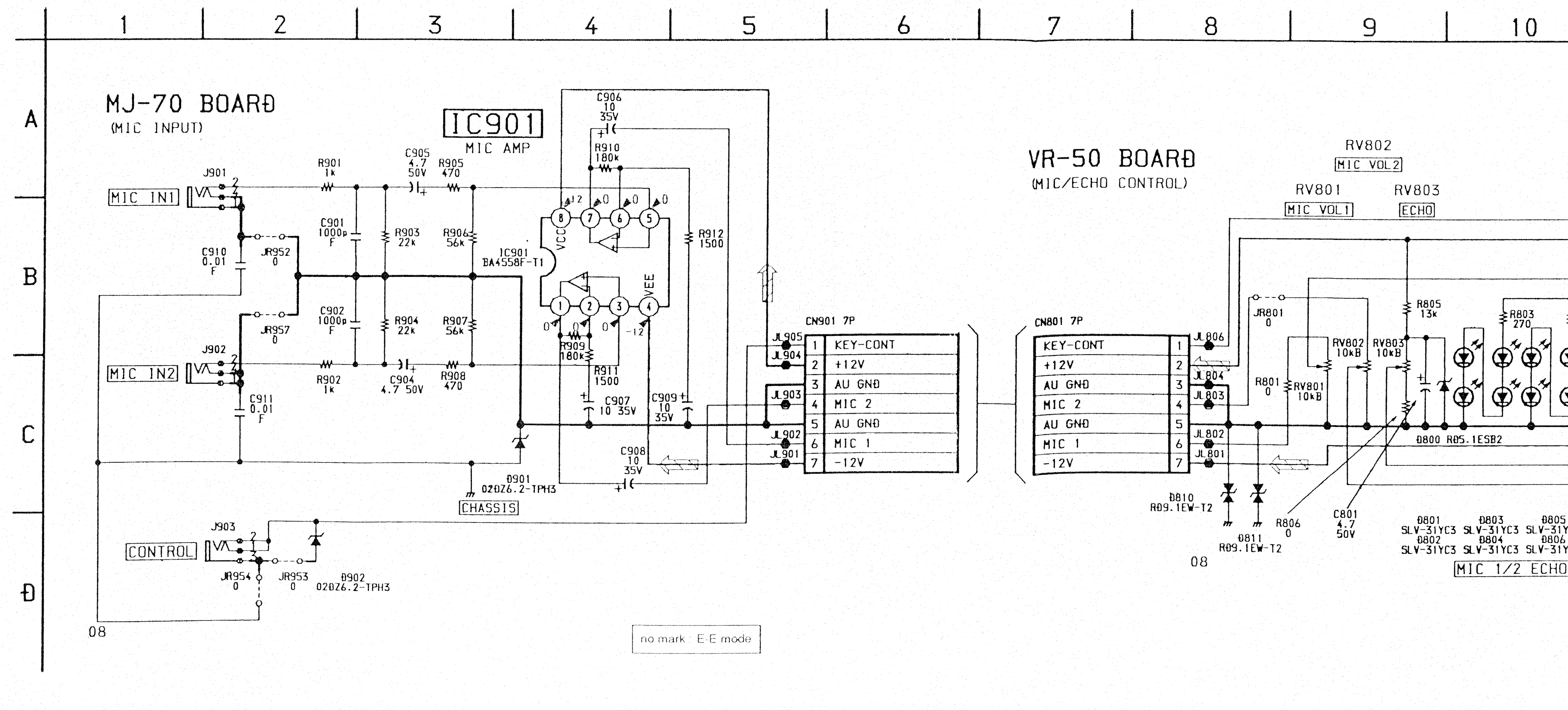
MJ-70 BOARD
CONTROL
MIC IN 1
MIC IN 2
CN901
JL902
JL903
JL901
DW901
JL905
JL904
JR950
R953
JR954
JR952
C906
C908
C907
C909
C905
IC901
R906
R903
R901
R907
R904
C904
R909
C903
08
1-656-968-
11



VR-50 BOARD
CN802
D811
D803
JR826
JL811
JL812
JL808
JL809
JL810
JR801
D808
RV802
RV801
MIC VOL 2
MIC VOL 1
D801-808
MIC 1/2 ECHO
ILM
08

VR-50 (MIC/ECHO CONTROL), MJ-70 (MIC INPUT) SCHEMATIC DIAGRAM (SLV-K862CH/K862PS/K872MN/K872PS MODEL)

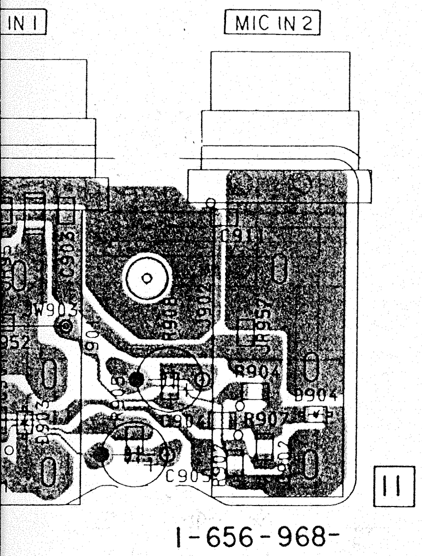
— Ref. No. VR-50 BOARD : 9,000 series, MJ-70 BOARD : 7,000 series —



1
2
3
4
5
6
7
8
9
10
A
B
C
D
MJ-70 BOARD
(MIC INPUT)
IC901
MIC AMP
IC901 BA4558F-T1
J901
MIC IN1
J902
MIC IN2
J903
CONTROL
R901 1k
R902 1k
C905 4.7 50V
R905 470
C904 4.7 50V
R908 470
C901 1000p F
C902 1000p F
R903 22k
R904 22k
R906 56k
R907 56k
C910 0.01 F
C911 0.01 F
JR952 0
JR957 0
JR954 0
JR953 0
C906 10 35V
R910 180k
R909 180k
R911 1500
R912 1500
C907 10 35V
C909 10 35V
C908 10 35V
D901 02DZ6.2-TPH3
D902 02DZ6.2-TPH3
CHASSIS
VCC
VEE
12
0
-12
CN901 7P
JL905
JL904
JL903
JL902
JL901
KEY-CONT
+12V
AU GND
MIC 2
AU GND
MIC 1
-12V
VR-50 BOARD
(MIC/ECHO CONTROL)
CN801 7P
JL806
JL804
JL803
JL802
JL801
JR801 0
RV802
MIC VOL2
RV801
MIC VOL1
RV803
ECHO
R805 13k
R803 270
RV802 10kB
RV803 10kB
R801 0
RV801 10kB
D800 R05.1ESB2
D810 R09.1EW-T2
D811 R09.1EW-T2
R806 0
C801 4.7 50V
D801 SLV-31YC3
D802 SLV-31YC3
D803 SLV-31YC3
D804 SLV-31YC3
D805 SLV-31Y
D806 SLV-31Y
MIC 1/2 ECHO
08
08
no mark : E-E mode

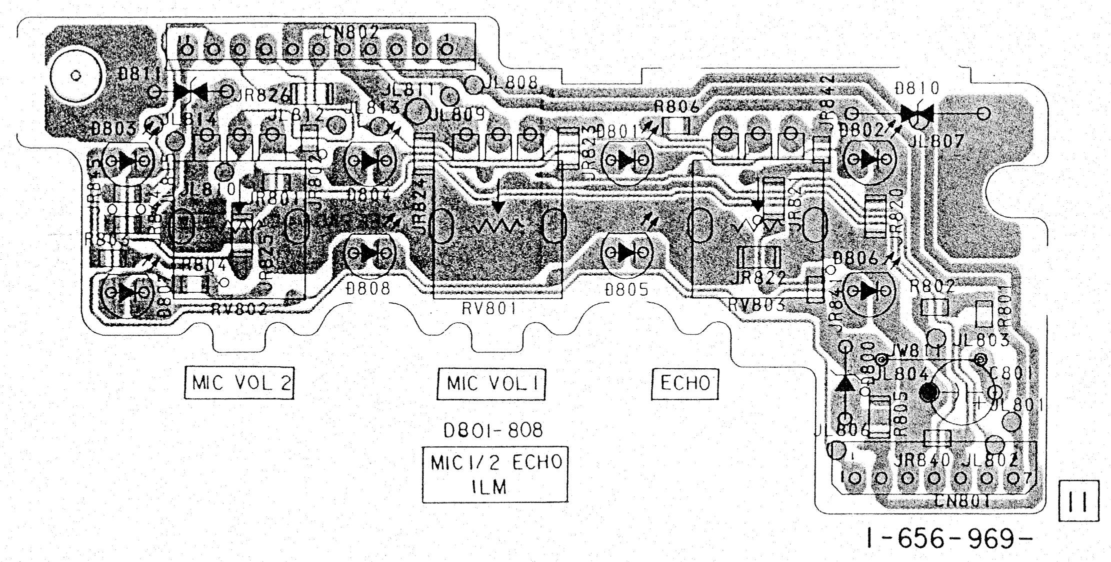
) PRINTED WIRING BOARD

D : 7,000 series —



IN I
MIC IN 2
I-656-968-

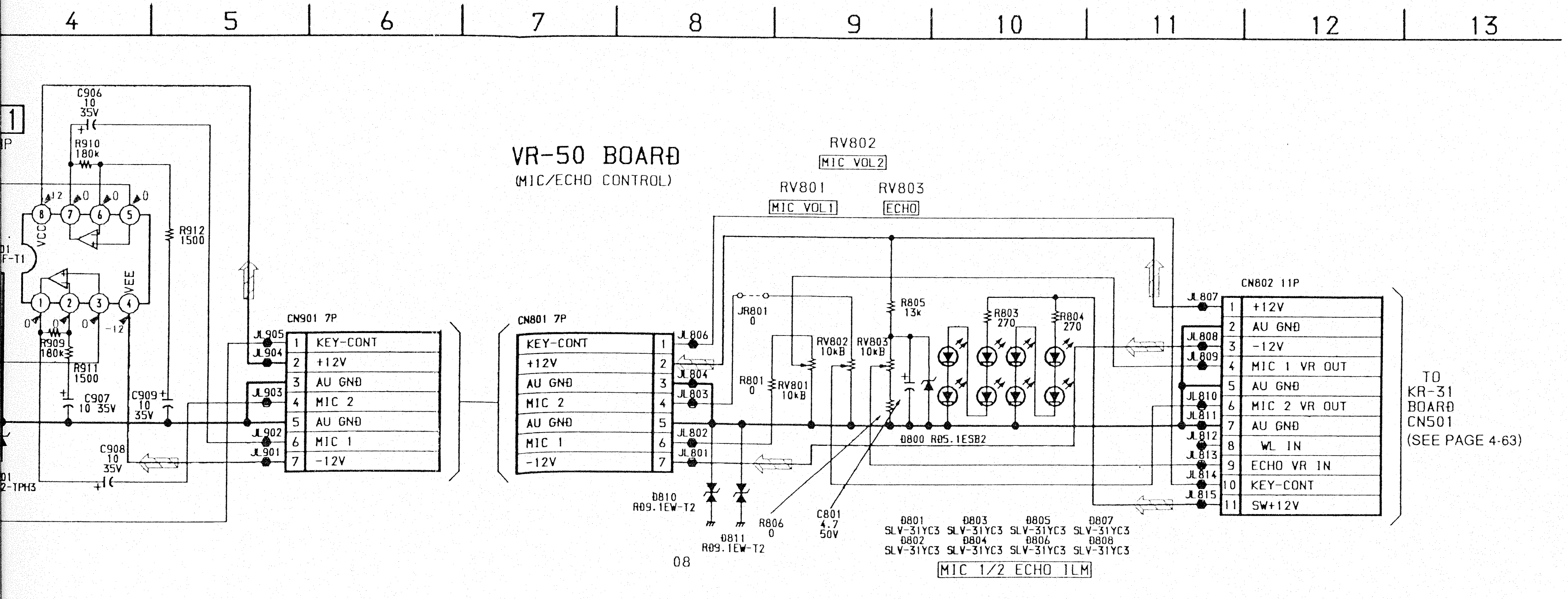
VR-50 BOARD



CN802
D811
D803
D801
D802
D804
D806
D808
D805
D810
RV801
RV802
RV803
CN801
MIC VOL 2
MIC VOL I
ECHO
D801-808
MIC I/2 ECHO ILM
08
I-656-969-

) SCHEMATIC DIAGRAM

D : 7,000 series —



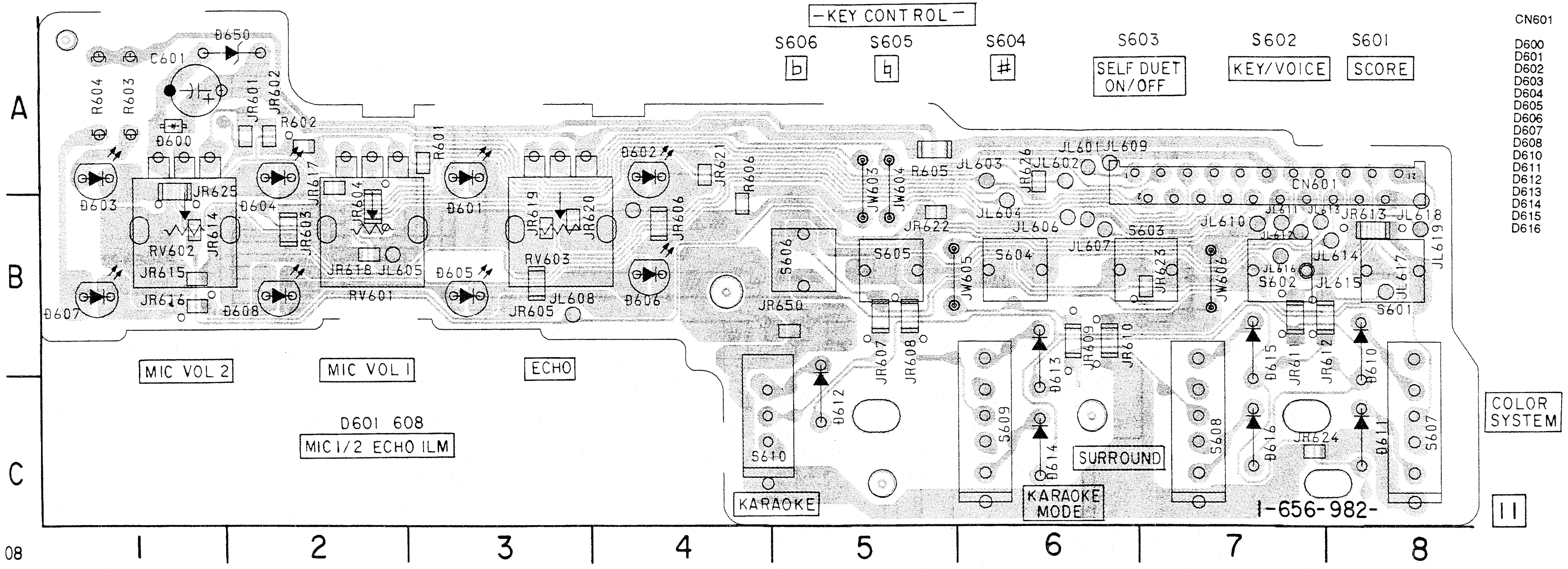
4
5
6
7
8
9
10
11
12
13
CN901 7P
KEY-CONT
+12V
AU GND
MIC 2
AU GND
MIC 1
-12V
VR-50 BOARD
(MIC/ECHO CONTROL)
RV802
MIC VOL2
RV801
MIC VOL1
RV803
ECHO
CN801 7P
KEY-CONT
+12V
AU GND
MIC 2
AU GND
MIC 1
-12V
CN802 11P
+12V
AU GND
-12V
MIC 1 VR OUT
AU GND
MIC 2 VR OUT
AU GND
WL IN
ECHO VR IN
KEY-CONT
SW+12V
TO
KR-31
BOARD
CN501
(SEE PAGE 4-63)
D801 D803 D805 D807
SLV-31YC3
MIC 1/2 ECHO ILM
D810 RD9.1EW-T2
D811 RD9.1EW-T2
D800 RD5.1ESB2
08

no mark : E-E mode

VR-54 (KEY FUNCTION), MJ-72 (MIC INPUT) PRINTED WIRING BOARD (SLV-KH3CH/KH3ME/KH3PS MODEL)

— Ref. No. VR-54 BOARD : 9,000 series, MJ-72 BOARD : 7,000 series —

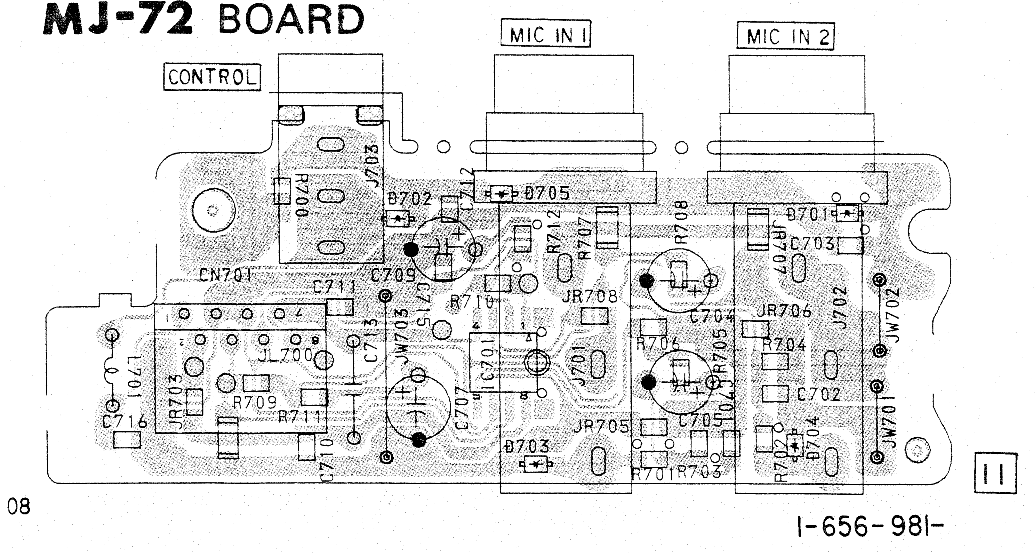
VR-54 BOARD



A
B
C
1
2
3
4
5
6
7
8
08
–KEY CONTROL–
S606
S605
S604
S603
S602
S601
SELF DUET ON/OFF
KEY/VOICE
SCORE
D650
C601
R604
R603
JR601
JR602
R602
D600
D603
D604
JR625
JR614
JR603
JR617
JR604
D601
JR619
JR620
D602
JR606
JR621
R606
R605
JW603
JW604
JL601
JL609
JL603
JL602
CN601
JL604
JL606
JR622
JL610
JR611
JR613
JL618
JL619
RV602
JR615
JR616
D607
D608
JR618
JL605
D605
RV601
RV603
JL608
JR605
D606
JR650
S606
S605
S604
S603
JL607
JR623
JW605
JW606
JL616
JL614
S602
JL615
JL617
S601
MIC VOL 2
MIC VOL 1
ECHO
D601 608
MIC1/2 ECHO ILM
S610
D612
JR607
JR608
D613
JR609
JR610
S609
D614
SURROUND
KARAOKE
KARAOKE MODE
S608
D615
JR611
JR612
D616
JR624
D610
D611
S607
COLOR SYSTEM
1-656-982-
11

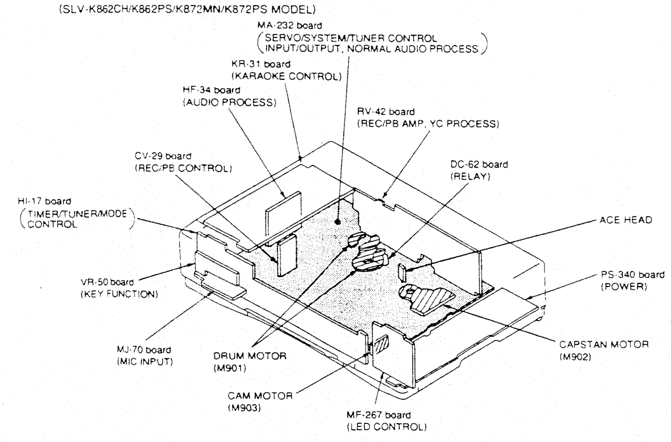
VR-54 BOARD	
CN601	A-7
D600	A-1
D601	A-3
D602	A-4
D603	A-1
D604	A-2
D605	B-3
D606	B-4
D607	B-1
D608	B-2
D610	B-8
D611	C-8
D612	C-5
D613	B-6
D614	C-6
D615	B-7
D616	C-7

MJ-72 BOARD

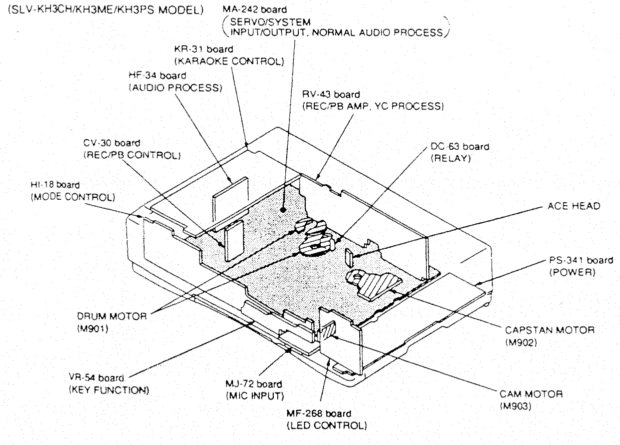


MIC IN 1
MIC IN 2
CONTROL
R700
J703
D702
C712
D705
R712
R707
R708
D701
C703
J702
CN701
C711
C709
JR708
C713
JW703
S701
R710
C704
JR706
R704
JW702
JL700
IC701
JR701
R706
R705
C705
C702
JR707
R709
R711
JR703
C716
C710
C707
D703
JR705
R701
R703
R702
D704
JW701
08
1-656-981-
11

There are few cases that the part isn't mounted in this model is printed on this diagram.



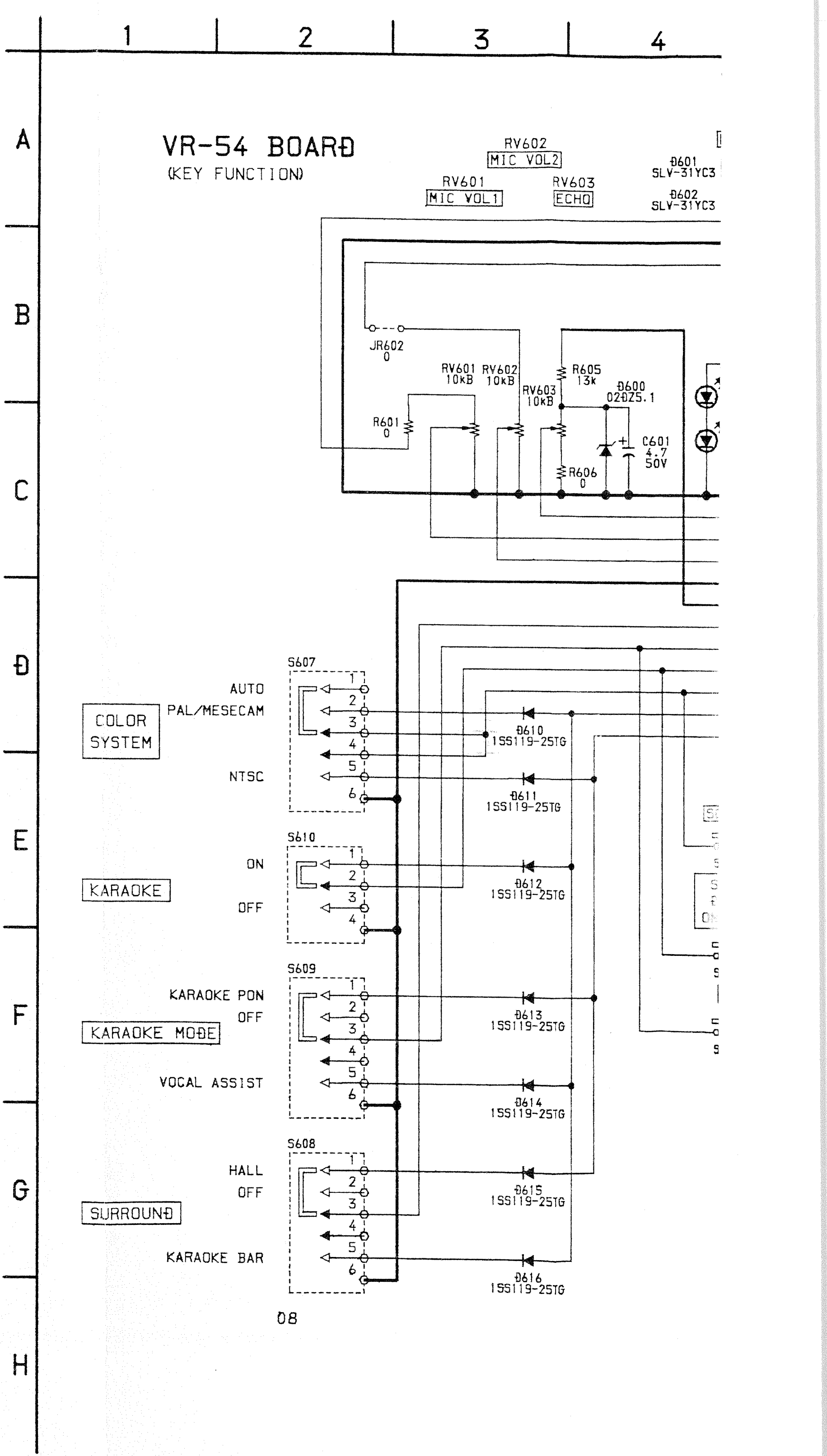
(SLV-K862CH/K862PS/K872MN/K872PS MODEL)
MA-232 board
(SERVO/SYSTEM/TUNER CONTROL INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)



(SLV-KH3CH/KH3ME/KH3PS MODEL)
MA-242 board
(SERVO/SYSTEM INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)

VR-54 (KEY FUNCTION), MJ-72 (MIC INPUT) SCHEMATIC DIAG (SLV-KH3CH/KH3ME/KH3PS MODEL)

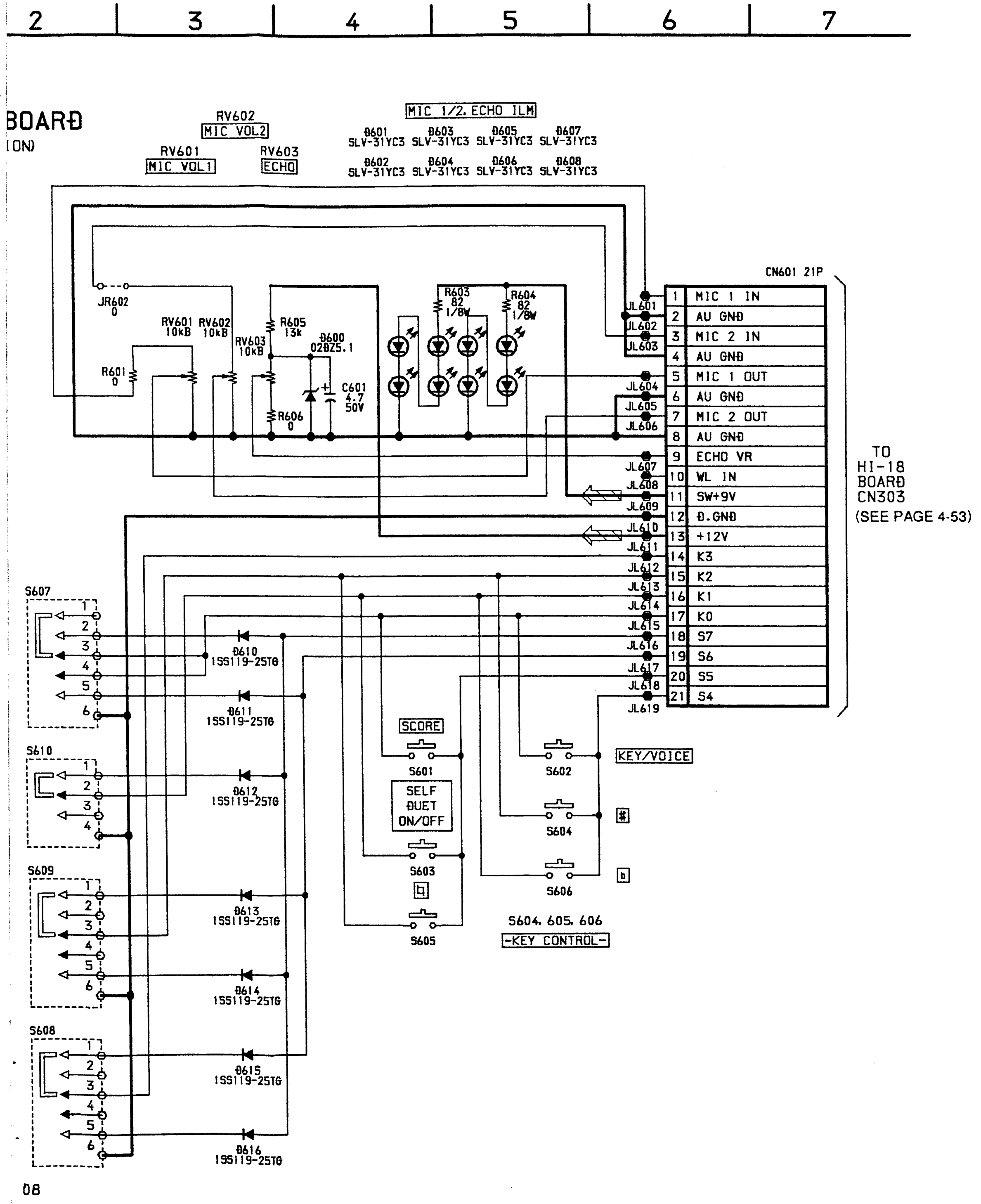
— Ref. No. VR-54 BOARD : 9,000 series, MJ-72 BOARD : 7,000 series



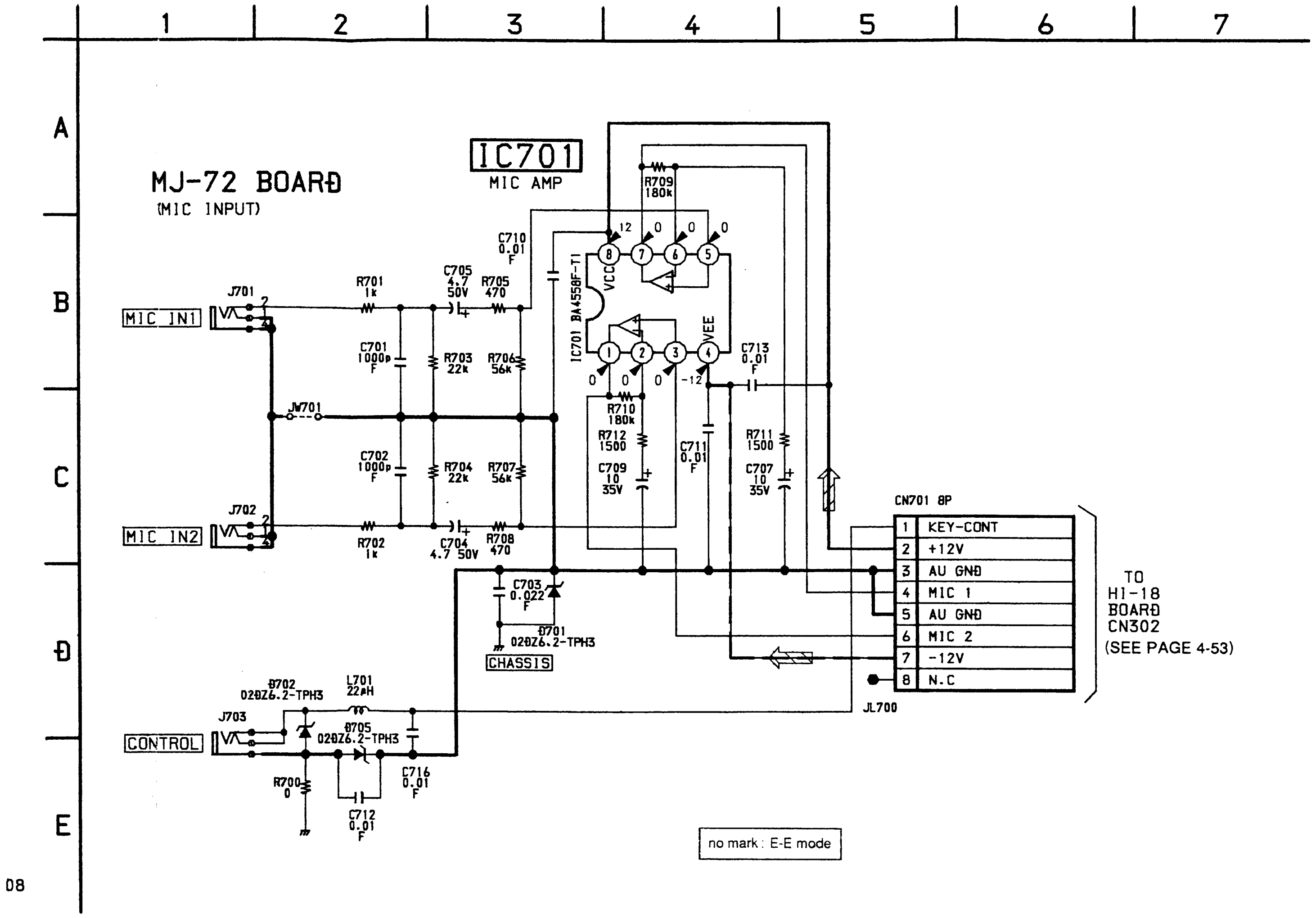
1
2
3
4
A
B
C
D
E
F
G
H
VR-54 BOARD
(KEY FUNCTION)
RV602
MIC VOL2
RV601
MIC VOL1
RV603
ECHO
D601
SLV-31YC3
D602
SLV-31YC3
JR602
0
RV601
10kB
RV602
10kB
RV603
10kB
R605
13k
D600
02DZ5.1
R601
0
C601
4.7
50V
R606
0
S607
AUTO
PAL/MESECAM
NTSC
COLOR SYSTEM
D610
1SS119-25TG
D611
1SS119-25TG
S610
ON
OFF
KARAOKE
D612
1SS119-25TG
S609
KARAOKE PON
OFF
KARAOKE MODE
VOCAL ASSIST
D613
1SS119-25TG
D614
1SS119-25TG
S608
HALL
OFF
SURROUND
KARAOKE BAR
D615
1SS119-25TG
D616
1SS119-25TG
08

)N), MJ-72 (MIC INPUT) SCHEMATIC DIAGRAM
'KH3PS MODEL)

'RD : 9,000 series, MJ-72 BOARD : 7,000 series —



2
3
4
5
6
7
BOARĐ
(ON)
RV601
MIC VOL1
RV602
MIC VOL2
RV603
ECHO
MIC 1/2, ECHO ILM
Đ601 SLV-31YC3
Đ603 SLV-31YC3
Đ605 SLV-31YC3
Đ607 SLV-31YC3
Đ602 SLV-31YC3
Đ604 SLV-31YC3
Đ606 SLV-31YC3
Đ608 SLV-31YC3
JR602 0
RV601 10kB
RV602 10kB
RV603 10kB
R605 13k
Đ600 02ĐZ5.1
R603 82 1/8W
R604 82 1/8W
R601 0
R606 0
C601 4.7 50V
CN601 21P
JL601
JL602
JL603
JL604
JL605
JL606
JL607
JL608
JL609
JL610
JL611
JL612
JL613
JL614
JL615
JL616
JL617
JL618
JL619
1 MIC 1 IN
2 AU GNĐ
3 MIC 2 IN
4 AU GNĐ
5 MIC 1 OUT
6 AU GNĐ
7 MIC 2 OUT
8 AU GNĐ
9 ECHO VR
10 WL IN
11 SW+9V
12 Đ.GNĐ
13 +12V
14 K3
15 K2
16 K1
17 K0
18 S7
19 S6
20 S5
21 S4
TO HI-18 BOARĐ CN303 (SEE PAGE 4-53)
S607
S610
S609
S608
Đ610 1SS119-25TĐ
Đ611 1SS119-25TĐ
Đ612 1SS119-25TĐ
Đ613 1SS119-25TĐ
Đ614 1SS119-25TĐ
Đ615 1SS119-25TĐ
Đ616 1SS119-25TĐ
SCORE
S601
SELF ĐUET ON/OFF
S603
S605
S602
KEY/VOICE
S604
S606
♯
♭
S604, 605, 606
-KEY CONTROL-
08



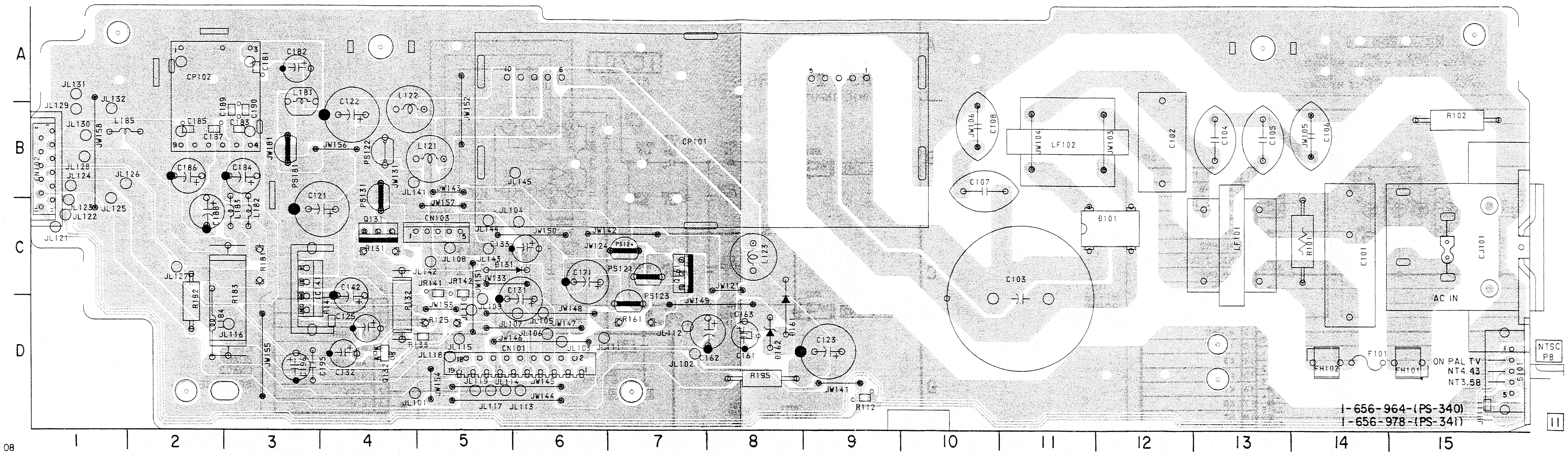
1
2
3
4
5
6
7
A
B
C
Đ
E
MJ-72 BOARĐ
(MIC INPUT)
IC701
MIC AMP
IC701 BA4558F-T1
VCC
VEE
R709 180k
C710 0.01 F
J701
MIC IN1
R701 1k
C705 4.7 50V
R705 470
C701 1000p F
R703 22k
R706 56k
JW701
C702 1000p F
R704 22k
R707 56k
J702
MIC IN2
R702 1k
C704 4.7 50V
R708 470
R710 180k
R712 1500
C709 10 35V
C711 0.01 F
C713 0.01 F
R711 1500
C707 10 35V
12
0
0
0
0
0
0
-12
C703 0.022 F
Đ701 02ĐZ6.2-TPH3
CHASSIS
Đ702 02ĐZ6.2-TPH3
L701 22μH
J703
Đ705 02ĐZ6.2-TPH3
CONTROL
R700 0
C716 0.01 F
C712 0.01 F
CN701 8P
1 KEY-CONT
2 +12V
3 AU GNĐ
4 MIC 1
5 AU GNĐ
6 MIC 2
7 -12V
8 N.C
JL700
TO HI-18 BOARĐ CN302 (SEE PAGE 4-53)
no mark : E-E mode
08

KEY FUNCTION, MIC INPUT
VR-54, MJ-72

PS-340/341 (POWER) PRINTED WIRING BOARD

— Ref. No. PS-340/341 BOARD : 8,000 series —

PS-340 BOARD (K862/K872 MODEL)
PS-341 BOARD (KH3 MODEL)


A
B
C
D
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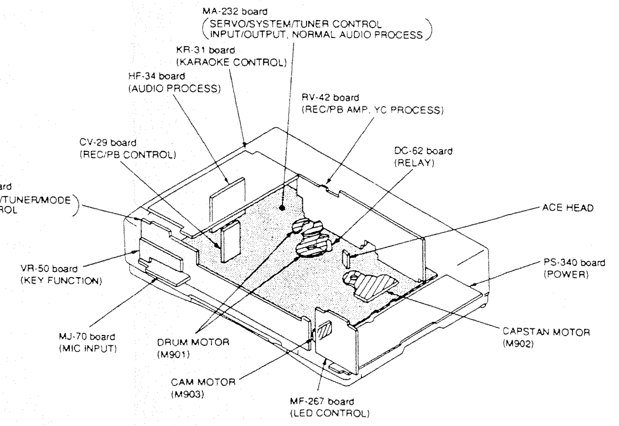
12
13
14
15
CN102
CP102
CN103
CN101
CP101
JL131
JL129
JL132
JL130
JL126
JL125
JL124
JL123
JL122
JL121
JL127
JL116
L185
C185
C187
C183
C189
C190
C181
C182
L181
C186
C184
C188
L183
L182
L184
JW158
JW181
JW156
PS181
R181
R182
R183
C122
L122
L121
PS122
C121
PS131
Q131
JL141
JW143
JW157
JL145
JL104
JL144
JW150
JW142
JW124
PS124
PS123
C133
D131
C131
C171
R131
JL108
JL142
JR141
JR142
JL143
JW133
JW153
JL103
JW148
C142
IC141
C125
R125
JL133
JL115
JL107
JL105
JW147
JL106
JL118
JW146
R161
Q161
JW149
JW121
L123
C163
D161
D162
C162
C123
JL112
JL102
R132
Q132
C132
C195
C196
JW155
JW154
JL101
JL119
JL114
JW145
JW144
JL117
JL113
JW152
JW131
JW151
R195
JW141
R112
JW106
C108
C107
C103
LF102
JW104
JW103
D101
C102
C104
C105
JW105
C106
R102
LF101
R101
C101
CJ101
AC IN
F101
FH102
FH101
ON PAL TV
NT4.43
NT3.58
S101
NTSC
PB
1-656-964-(PS-340)
1-656-978-(PS-341)
11

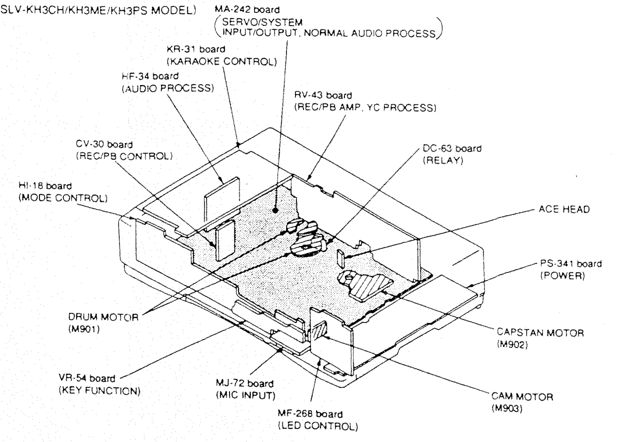
PS-340/341 BOARD	
CN101	D-6
CN102	B-1
CN103	C-5
D101	C-12
D131	C-5
D161	D-8
D162	D-8
IC141	C-3
Q131	C-4
Q132	D-4
Q161	C-7

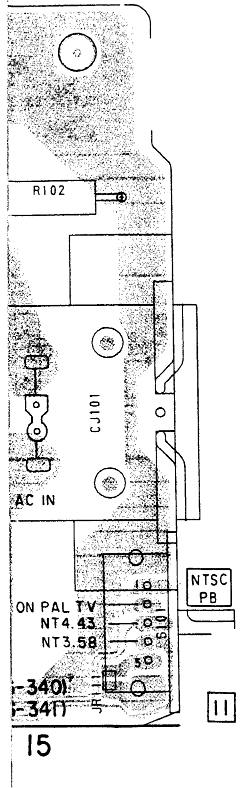
There are few cases that the part isn't mounted in this model is printed on this diagram.

(SLV-K862CH/K862PS/K872MN/K872PS MODEL)


MA-232 board
(SERVO/SYSTEM/TUNER CONTROL
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-42 board
(REC/PB AMP, YC PROCESS)
CV-29 board
(REC/PB CONTROL)
DC-62 board
(RELAY)
HI-17 board
(TIMER/TUNER/MODE
CONTROL)
ACE HEAD
VR-50 board
(KEY FUNCTION)
PS-340 board
(POWER)
MJ-70 board
(MIC INPUT)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
MF-267 board
(LED CONTROL)

(SLV-KH3CH/KH3ME/KH3PS MODEL)

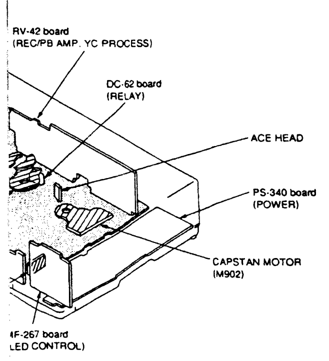

MA-242 board
(SERVO/SYSTEM
INPUT/OUTPUT, NORMAL AUDIO PROCESS)
KR-31 board
(KARAOKE CONTROL)
HF-34 board
(AUDIO PROCESS)
RV-43 board
(REC/PB AMP, YC PROCESS)
CV-30 board
(REC/PB CONTROL)
DC-63 board
(RELAY)
HI-18 board
(MODE CONTROL)
ACE HEAD
PS-341 board
(POWER)
DRUM MOTOR
(M901)
CAPSTAN MOTOR
(M902)
VR-54 board
(KEY FUNCTION)
MJ-72 board
(MIC INPUT)
CAM MOTOR
(M903)
MF-268 board
(LED CONTROL)


R102
CJ101
AC IN
NTSC
PB
ON PAL TV
NT4.43
NT3.58
S101
JR111
-340)
-341)
11
15

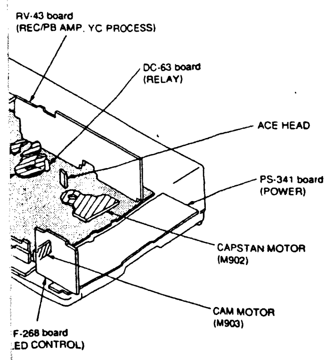
PS-340/341 BOARD

CN101	D-6
CN102	B-1
CN103	C-5
D101	C-12
D131	C-5
D161	D-8
D162	D-8
IC141	C-3
Q131	C-4
Q132	D-4
Q161	C-7

UNER CONTROL
ORMAL AUDIO PROCESS)

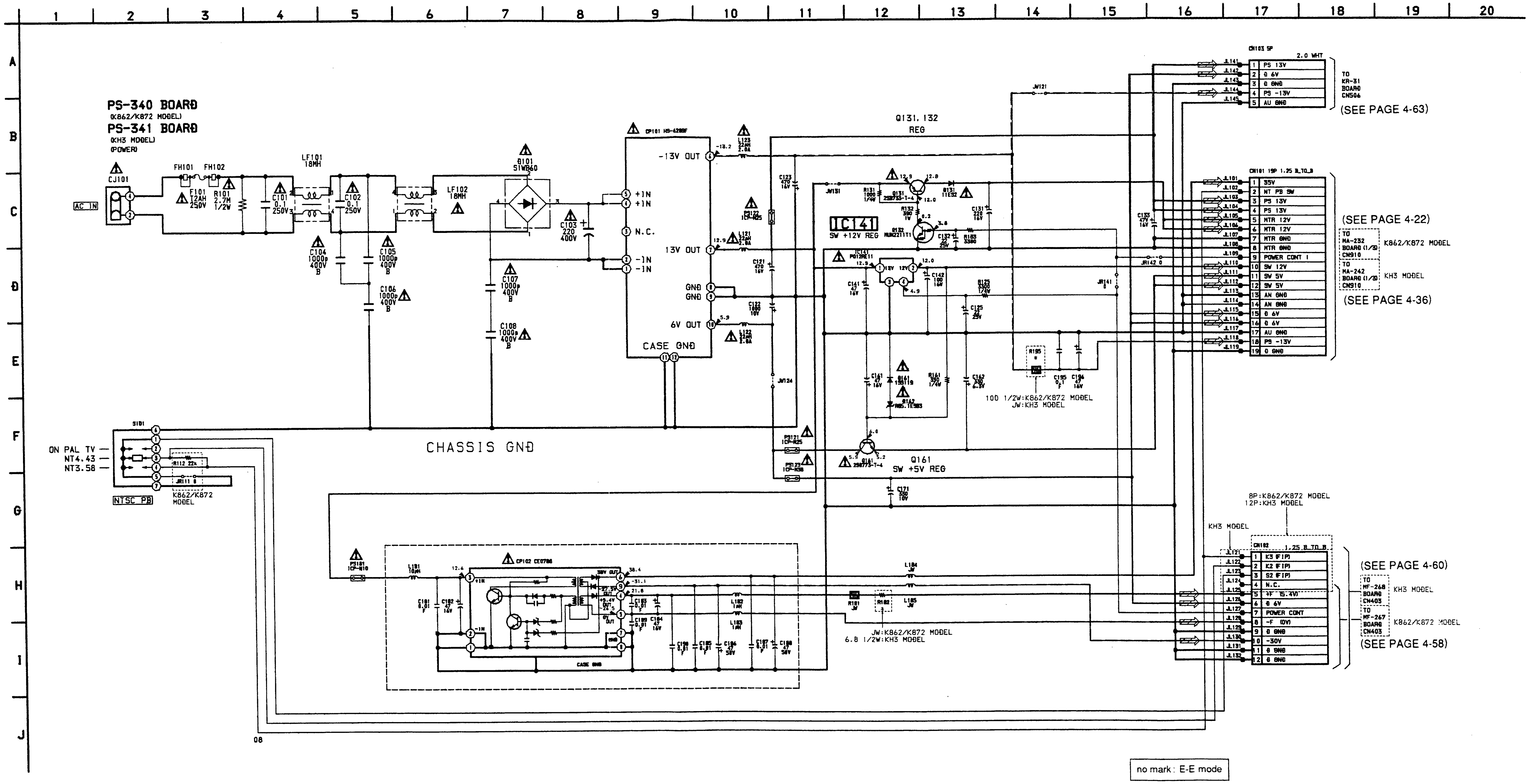

RV-42 board
(REC/PB AMP, YC PROCESS)
DC-62 board
(RELAY)
ACE HEAD
PS-340 board
(POWER)
CAPSTAN MOTOR
(M902)
F-267 board
LED CONTROL)

EM
T, NORMAL AUDIO PROCESS)


RV-43 board
(REC/PB AMP, YC PROCESS)
DC-63 board
(RELAY)
ACE HEAD
PS-341 board
(POWER)
CAPSTAN MOTOR
(M902)
CAM MOTOR
(M903)
F-268 board
LED CONTROL)

PS-340/341 (POWER) SCHEMATIC DIAGRAM

— Ref. No. PS-340/341 BOARD : 8,000 series —


1
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16
17
18
19
20
A
B
C
D
E
F
G
H
I
J
PS-340 BOARD
(K862/K872 MODEL)
PS-341 BOARD
(KH3 MODEL)
(POWER)
CJ101
AC IN
FH101
FH102
F101
T2AH
250V
R101
2.7M
1/2W
C101
0.1
250V
LF101
18MH
C102
0.1
250V
C104
1000p
400V
B
C105
1000p
400V
B
C106
1000p
400V
B
LF102
18MH
D101
S1WB60
C103
220
400V
C107
1000p
400V
B
C108
1000p
400V
B
CP101 HS-6200F
+IN
+IN
N.C.
-IN
-IN
-13V OUT
13V OUT
GND
GND
6V OUT
CASE GND
-13.2
12.9
5.9
L123
22µH
2.0A
L121
22µH
2.0A
L122
22µH
2.0A
PS122
ICP-N25
C123
470
16V
C121
470
16V
C122
1000
10V
JW124
JW131
R131
1000
1/4W
Q131
2SB733-T-4
R132
390
1W
Q132
MUN2211T1
D131
11ES2
C131
220
16V
C132
22
25V
R133
3300
Q131, 132
REG
IC141
SW +12V REG
IC141
PQ12RE11
13V
12V
12.9
12.8
12.0
8.2
3.8
4.9
C141
47
16V
C142
100
16V
R125
3300
1/4W
C125
22
25V
C161
47
16V
D161
1SS119
D162
RD5.1ESB3
R161
390
1/4W
C162
330
6.3V
6.0
5.9
5.2
Q161
2SB773-T-4
Q161
SW +5V REG
PS121
ICP-N25
PS123
ICP-N38
C171
330
10V
JW121
C133
47V
16V
JR142 0
JR141
0
R195
*
C195
0.1
F
C196
47
16V
100 1/2W:K862/K872 MODEL
JW:KH3 MODEL
S101
ON PAL TV
NT4.43
NT3.58
R112 22k
JR111 0
K862/K872
MODEL
NTSC PB
CHASSIS GND
PS181
ICP-N10
L181
10µH
CP102 CE0786
12.6
+IN
-IN
38V OUT
-27.5V OUT
+5.4V OUT
0V OUT
GND
CASE GND
38.4
-31.1
21.8
-26.5
C181
0.01
F
C182
47
16V
C183
0.01
F
C184
47
16V
C189
0.01
F
C190
0.01
F
C185
0.01
F
C186
47
50V
C187
0.01
F
C188
47
50V
L182
1mH
L183
1mH
L184
JW
L185
JW
R181
JW
R182
*
JW:K862/K872 MODEL
6.8 1/2W:KH3 MODEL
08
CN103 5P
2.0 WHT
1 PS 13V
2 D 6V
3 D GND
4 PS -13V
5 AU GND
TO
KR-31
BOARD
CN506
(SEE PAGE 4-63)
CN101 19P 1.25 B TO B
1 35V
2 NT PB SW
3 PS 13V
4 PS 13V
5 MTR 12V
6 MTR 12V
7 MTR GND
8 MTR GND
9 POWER CONT 1
10 SW 12V
11 SW 5V
12 SW 5V
13 AN GND
14 AN GND
15 D 6V
16 D 6V
17 AU GND
18 PS -13V
19 D GND
(SEE PAGE 4-22)
TO
MA-232
BOARD (1/3)
CN910
K862/K872 MODEL
TO
MA-242
BOARD (1/3)
CN910
KH3 MODEL
(SEE PAGE 4-36)
8P:K862/K872 MODEL
12P:KH3 MODEL
KH3 MODEL
CN102
1.25 B TO B
1 K3 (FIP)
2 K2 (FIP)
3 S2 (FIP)
4 N.C.
5 +F (5.4V)
6 D 6V
7 POWER CONT
8 -F (0V)
9 D GND
10 -30V
11 D GND
12 D GND
(SEE PAGE 4-60)
TO
MF-268
BOARD
CN403
KH3 MODEL
TO
MF-267
BOARD
CN403
K862/K872 MODEL
(SEE PAGE 4-58)

no mark : E-E mode

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SECTION 5
REPAIR PARTS LIST

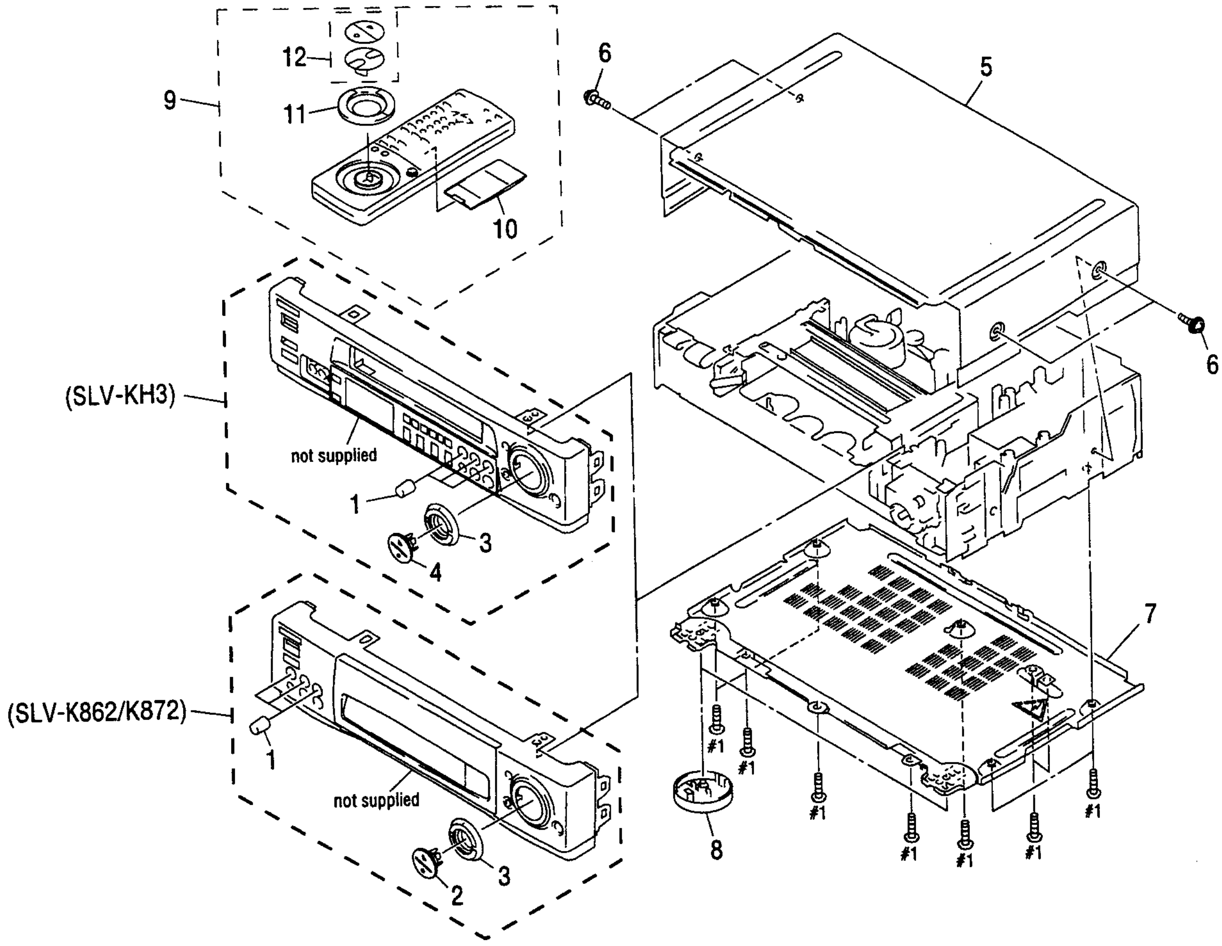
5-1. EXPLODED VIEWS

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviations

Abbreviated model name	All model names
K862	K862CH/K862PS
K872	K872MN/K872PS
KH3	KH3CH/KH3ME/KH3PS

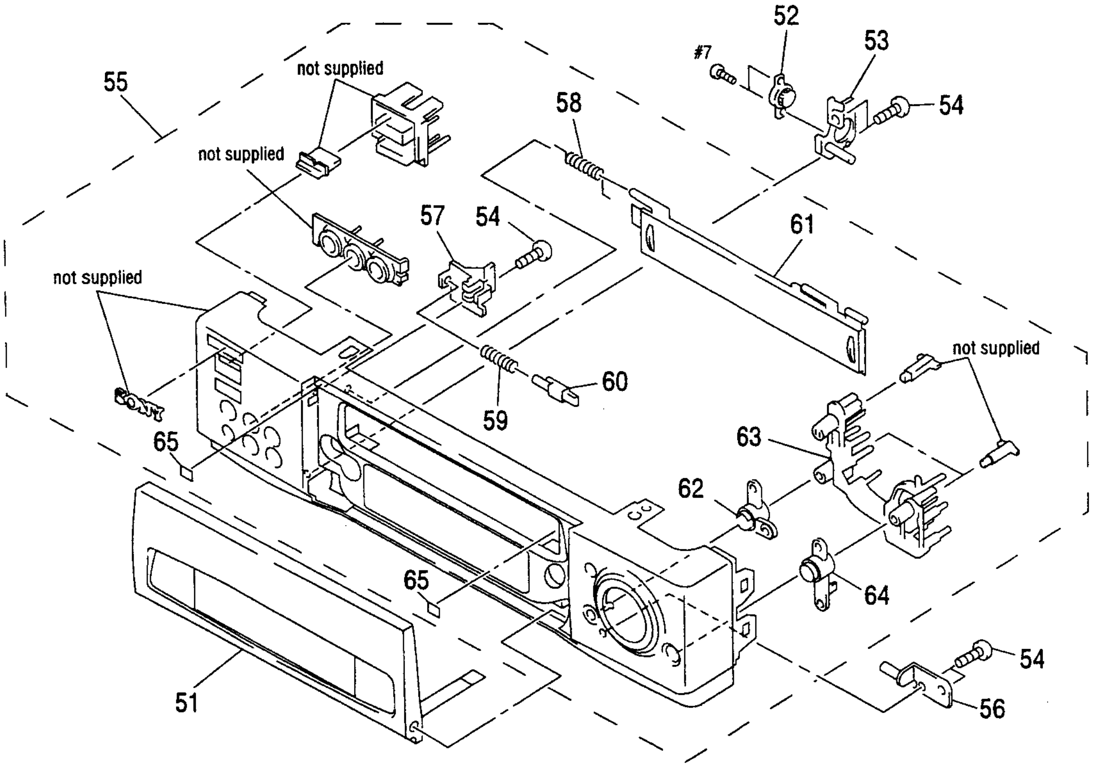
The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

5-1-1. CASE ASSEMBLY



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	3-964-584-01	KNOB, VOL	
2	X-3945-230-1	BUTTON ASSY, FUNCTION (K862/K872)	
3	X-3944-709-1	RING ASSY, SHUTTLE	
4	X-3945-197-1	BUTTON ASSY, FUNCTION (KH3)	
* 5	3-964-576-01	CASE, UPPER	
6	3-710-901-11	SCREW, TAPPING	
* 7	3-964-577-01	PLATE, BOTTOM	
8	3-960-062-11	INSULATOR	
9	1-473-210-11	REMOTE COMMANDER (RMT-V165) (K872)	
9	1-473-210-21	REMOTE COMMANDER (RMT-V165A) (K862)	
9	1-473-210-41	REMOTE COMMANDER (RMT-V165C) (KH3)	
10	3-708-817-01	COVER, BATTERY	
11	3-957-513-11	RING, SHUTTLE	
12	X-3944-446-1	BUTTON ASSY, FUNCTION	

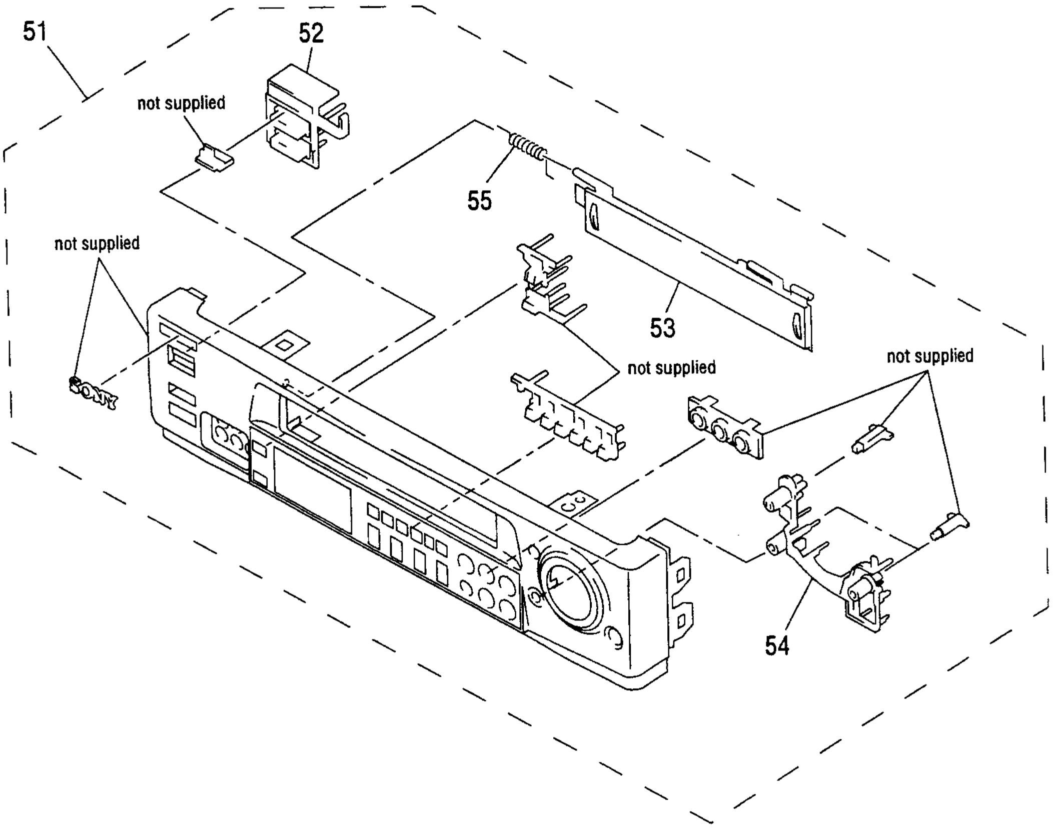
5-1-2. FRONT PANEL ASSEMBLY
(SLV-K862CH/K862PS/K872MN/K872PS)



52
#7
53
55
not supplied
58
54
not supplied
57
54
61
not supplied
not supplied
60
59
63
65
62
65
64
54
51
56

REF. NO.	PART NO.	DESCRIPTION	REMARK
51	1-473-209-11	SWITCH BLOCK, CONTROL (K872MN)	
51	1-473-209-21	SWITCH BLOCK, CONTROL (K872PS)	
51	1-473-209-31	SWITCH BLOCK, CONTROL (K862)	
52	3-319-224-21	DAMPER, SMALL	
53	X-3945-152-1	PLATE, FULCRUM(LEFT) ASSY	
54	4-921-277-41	SCREW (B2.6X8), TAPPING, BIND	
55	X-3945-183-1	PANEL ASSY, FRONT (K872)	
55	X-3945-187-1	PANEL ASSY, FRONT (K862)	
56	X-3944-447-1	PLATE(RIGHT) ASSY, FULCRUM, DOOR	
* 57	3-957-548-11	HOLDER, LOCK CLAW	
58	3-953-432-01	SPRING (GE), FL	
59	3-957-388-01	SPRING, COMPRESSION	
60	3-944-564-01	CLAW, LOCK	
61	3-964-589-01	DOOR, CASSETTE	
* 62	3-960-090-11	LENS, TR ILLUMINATION	
* 63	3-960-086-11	BASE (L), TR	
* 64	3-960-089-11	LENS, REC ILLUMINATION	
65	9-911-839-XX	STOPPER	

(SLV-KH3CH/KH3ME/KH3PS)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52
not supplied
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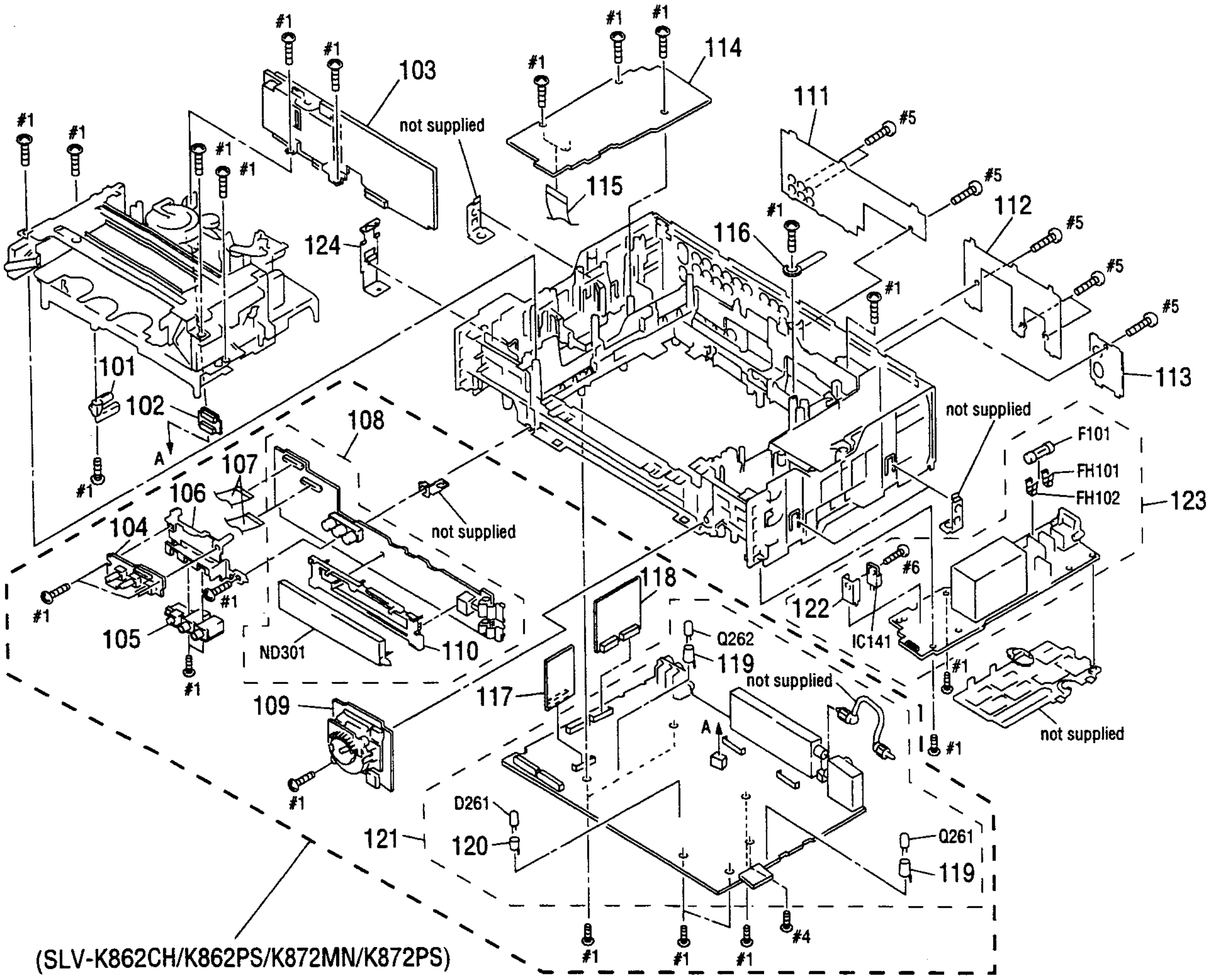
not supplied
53
not supplied
not supplied
54

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-3945-195-1	PANEL ASSY, FRONT	
52	3-957-237-11	BUTTON, POWER/EJECT	
53	3-964-589-11	DOOR, CASSETTE	
* 54	3-960-049-11	BASE, TR	
55	3-953-432-01	SPRING (GE), FL	

5-1-3. CHASSIS ASSEMBLY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Q262
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IC141
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FH102
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D261
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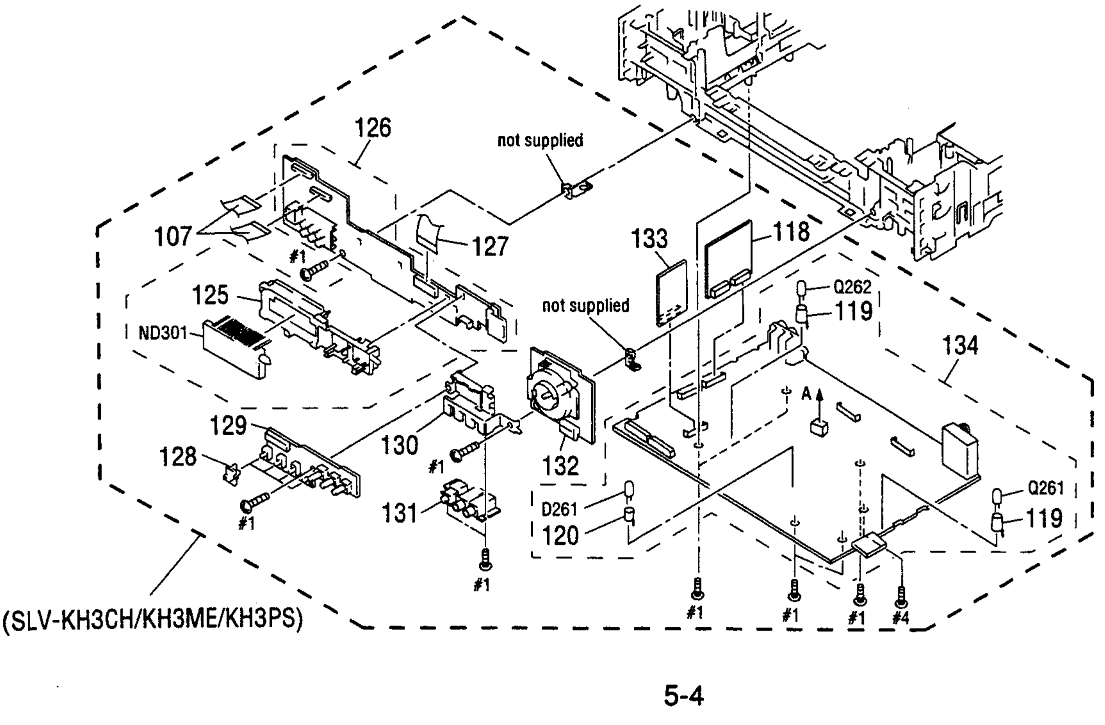
Q261
#4

(SLV-K862CH/K862PS/K872MN/K872PS)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Q262
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131
132
D261
120
Q261
#4

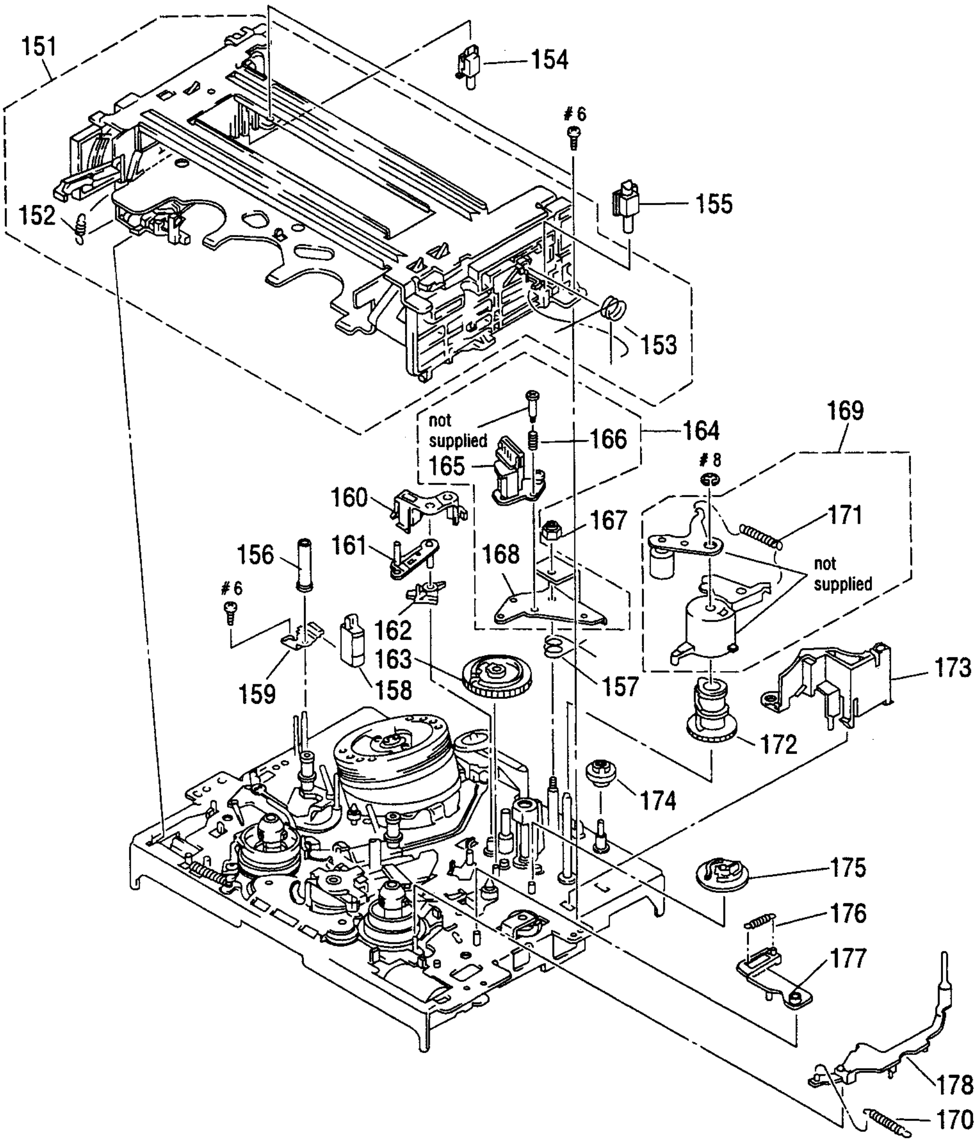
(SLV-KH3CH/KH3ME/KH3PS)

REF. NO.	PART NO.	DESCRIPTION	REMARK
* 101	3-960-067-11	HOLDER, MA	
* 102	1-656-965-11	DC-62 BOARD, COMPLETE	(K862/K872)
* 102	1-656-979-11	DC-63 BOARD, COMPLETE	(KH3)
* 103	A-6782-614-A	RV-42 BOARD, COMPLETE	(K862/K872)
* 103	A-6782-626-A	RV-43 BOARD, COMPLETE	(KH3)
* 104	A-6781-610-A	VR-50 BOARD, COMPLETE	(K862/K872)
* 105	A-6781-609-A	MJ-70 BOARD, COMPLETE	(K862/K872)
* 106	3-964-583-01	HOLDER, MJ PC BOARD	(K862/K872)
107	1-769-354-11	CABLE, FLEXIBLE FLAT	(19ARBOR)
* 108	A-6782-617-A	HI-17 BOARD, COMPLETE	(K872MN)
* 108	A-6782-700-A	HI-17 BOARD, COMPLETE	(K872PS)
* 108	A-6782-701-A	HI-17 BOARD, COMPLETE	(K862)
* 109	A-6782-612-A	MF-267 BOARD, COMPLETE	(K862/K872)
* 110	3-957-949-01	HOLDER, INDICATION TUBE	(K862/K872)
* 111	3-964-578-01	PLATE, JACK (IO), REAR	(K862/K872)
* 111	3-964-578-11	PLATE, JACK (IO), REAR	(KH3)
* 112	3-964-580-01	PLATE, JACK (PS), REAR	(K872MN)
* 112	3-964-580-11	PLATE, JACK (PS), REAR	(K872PS)
* 112	3-964-580-21	PLATE, JACK (PS), REAR	(K862CH, K862PS)
* 112	3-964-580-41	PLATE, JACK (PS), REAR	(KH3CH, KH3PS)
* 112	3-964-580-61	PLATE, JACK (PS), REAR	(KH3ME)
* 113	3-964-579-01	PLATE, JACK (TU), REAR	(K862/K872)
* 113	3-964-579-11	PLATE, JACK (TU), REAR	(KH3)
* 114	A-6782-613-A	KR-31 BOARD, COMPLETE	(K862/K872)
* 114	A-6782-639-A	KR-31 BOARD, COMPLETE	(KH3)
115	1-769-833-11	CABLE, FLEXIBLE FLAT 23P	
116	3-703-397-01	STOPPER, WIRING	
* 117	A-6782-618-A	CV-29 BOARD, COMPLETE	(K862/K872)
* 118	A-6721-619-A	HF-34 BOARD, COMPLETE	
* 119	3-960-273-01	SPACER, TOP END	
* 120	3-960-274-01	SPACER, LED	
* 121	A-6782-616-A	MA-232 BOARD, COMPLETE	(K872MN)
* 121	A-6782-619-A	MA-232 BOARD, COMPLETE	(K872PS)
121	A-6782-620-A	MA-232 BOARD, COMPLETE	(K862)
* 122	3-951-893-01	HEAT SINK	
* 123	A-6782-615-A	PS-340 BOARD, COMPLETE	(K862/K872)
* 123	A-6782-627-A	PS-341 BOARD, COMPLETE	(KH3)
* 124	3-960-571-11	PLATE, FIXED (LARGE), BOTTOM	
* 125	3-964-596-01	HOLDER, MJ	(KH3)
* 126	A-6782-629-A	HI-18 BOARD, COMPLETE	(KH3)
127	1-769-832-11	CABLE, FLEXIBLE FLAT 21P	(KH3)
128	3-950-963-51	KNOB, SELECTION	(KH3)
* 129	A-6782-632-A	VR-54 BOARD, COMPLETE	(KH3)
* 130	3-964-595-01	HOLDER, MJ	(KH3)
* 131	A-6782-631-A	MJ-72 BOARD, COMPLETE	(KH3)
* 132	A-6782-625-A	MF-268 BOARD, COMPLETE	(KH3)
* 133	A-6782-630-A	CV-30 BOARD, COMPLETE	(KH3)
* 134	A-6782-628-A	MA-242 BOARD, COMPLETE	(KH3)

REF. NO.	PART NO.	DESCRIPTION	REMARK
D261	8-719-048-26	DIODE GL528V1 (T/S)	
⚠F101	1-576-228-11	FUSE (H.B.C) 250V/2A	
FH101	1-533-293-11	FUSE HOLDER	
FH102	1-533-293-11	FUSE HOLDER	
⚠IC141	8-759-189-48	IC PQ12RE11	
ND301	1-517-296-31	INDICATOR TUBE, FLUORESCENT	(K862/K872)
ND301	1-810-294-21	INDICATOR TUBE, FLUORESCENT	(KH3)
Q261	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q262	8-729-025-92	PHOTO TRANSISTOR PT380F	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1-4. MECHANISM DECK ASSEMBLY (1)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#8
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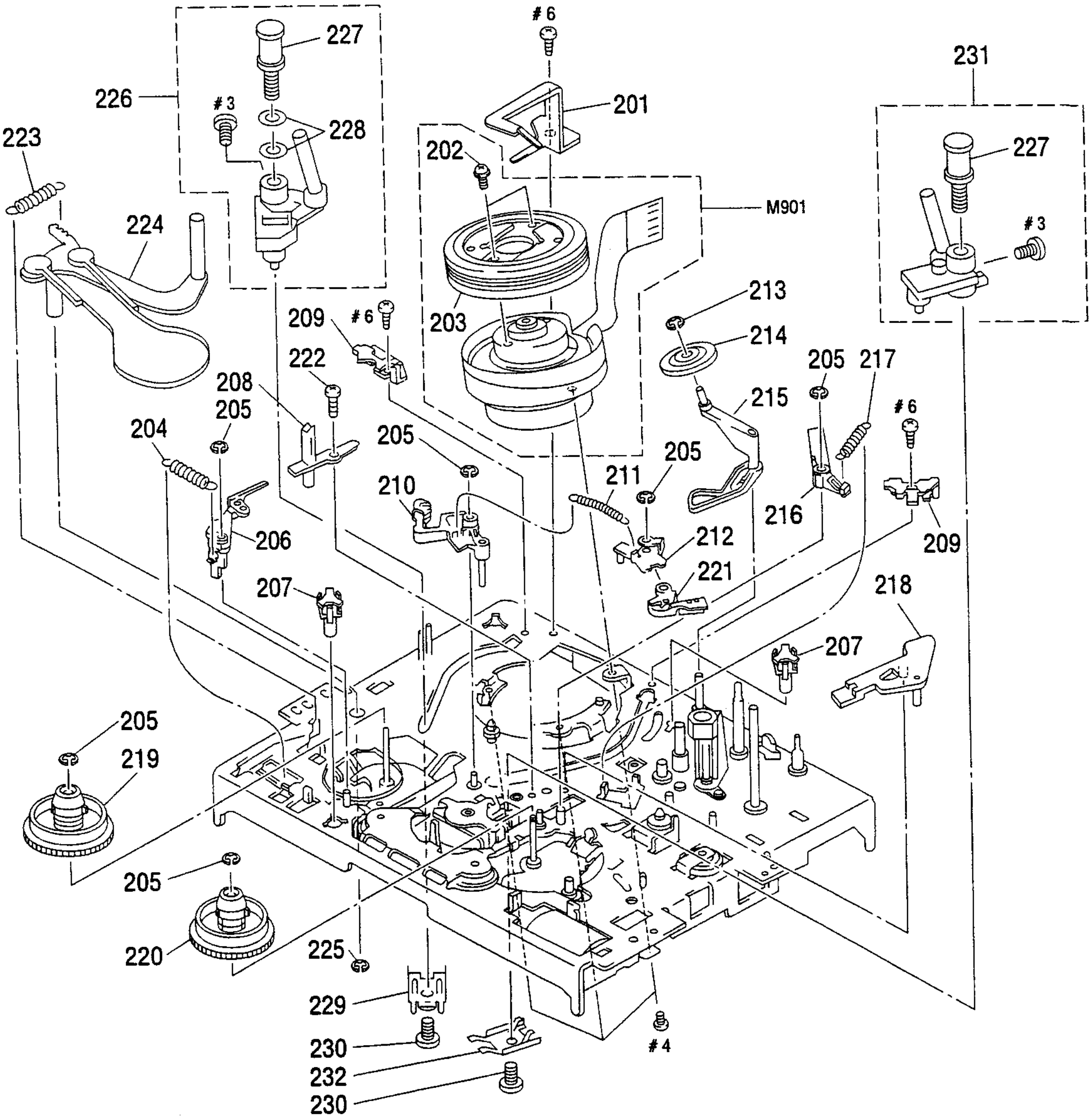
REF. NO.	PART NO.	DESCRIPTION	REMARK
151	A-6751-496-A	FL BLOCK ASSY	
152	3-958-467-01	SPRING, TENSION COIL	
153	3-958-195-01	SPRING, TORSION	
154	3-960-215-01	PLATE, LIGHT GUIDE, END SENSOR	
155	3-960-216-01	PLATE, LIGHT GUIDE, TOP SENSOR	
156	X-3944-460-1	ROLLER ASSY, TG2	
157	3-958-487-01	SPRING, (AEC) TORSION COIL	
158	1-500-144-11	HEAD, FE	
159	3-959-841-01	HOLDER, FEH	
160	3-962-298-01	BRACKET, TG7 TAPE	
161	X-3944-797-1	TG8 ASSY	
162	3-958-421-01	HOLDER, TG8	
163	3-958-152-01	GEAR, TG8	
164	A-6736-103-A	ACE BLOCK ASSY	
165	1-506-485-11	PIN, CONNECTOR 6P	
166	3-960-439-01	SPRING (ACE), COMPRESSION	
167	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
168	3-958-491-01	BASE, ACE	
169	A-6746-072-A	PRESS BLOCK ASSY, PINCH	
170	3-958-505-01	SPRING (SOFT BRAKE T), TENSION	
171	3-958-455-01	SPRING (PINCH), TENSION	
172	3-958-151-01	GEAR, ELEVATOR	
173	3-958-454-01	OPNER, LID	
174	3-958-501-01	SCREW, ACE ADJUSTMENT	
175	3-958-153-01	GEAR, PRESS	
176	3-958-462-01	SPRING (RVS BRAKE), TENSION	
177	X-3943-885-1	ARM ASSY, RVS BRAKE	
178	X-3943-882-1	BRAKE (T) ASSY, SOFT	

5-1-5. MECHANISM DECK ASSEMBLY (2)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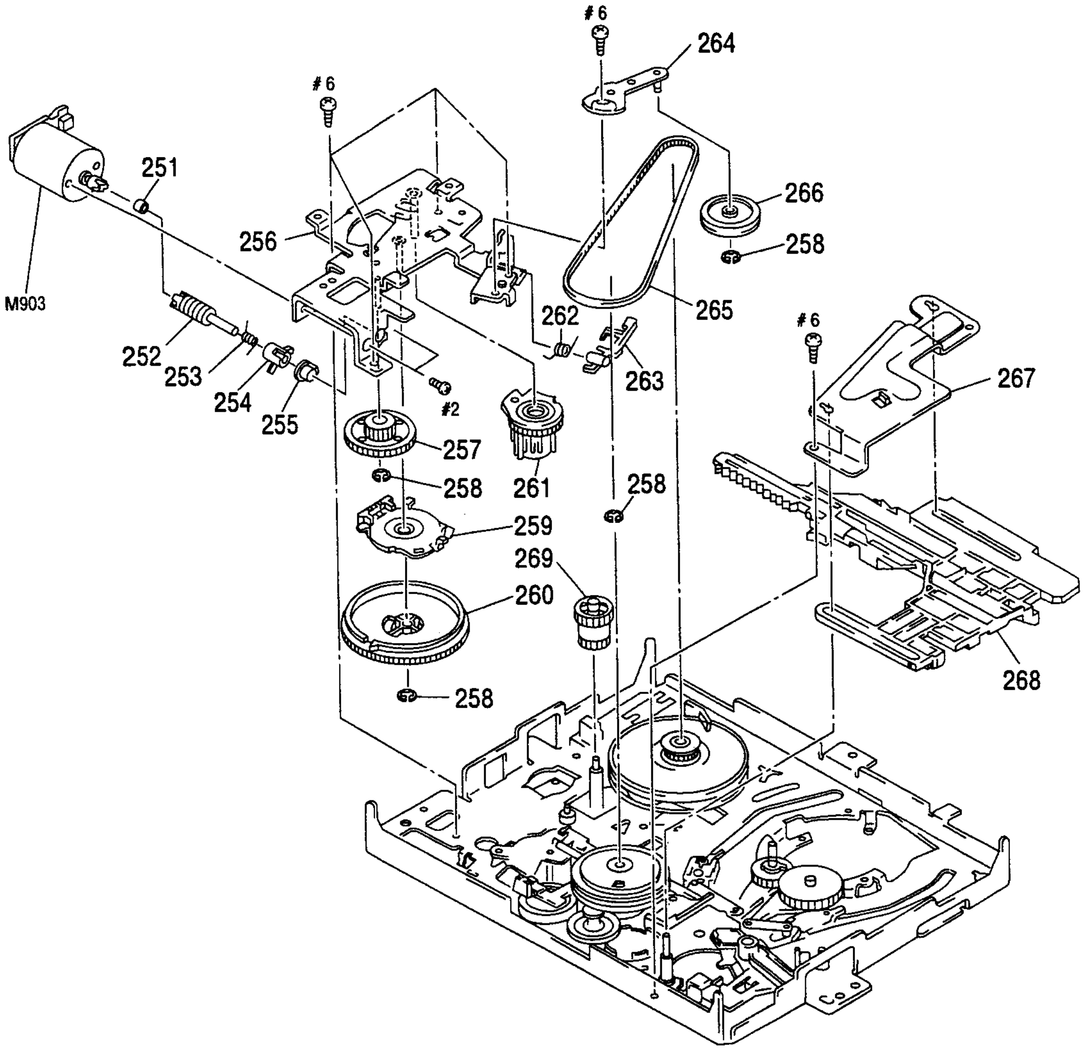
REF.NO.	PART NO.	DESCRIPTION	REMARK
201	X-3943-899-5	GROUND ASSY, SHAFT	
202	2-643-205-01	SCREW (PSW) 3X8	
203	8-848-625-02	DRUM ASSY, ROTARY UPPER (DZR-68-R)	
204	3-958-443-01	SPRING, STRETCH COIL SPRING	
205	3-669-595-00	WASHER (2), STOPPER	
206	3-958-450-01	BRAKE (S), SOFT	
207	3-958-390-01	SHAFT, PC BOARD	
208	3-958-391-01	PLATE, LIGHT GUIDE, LED	
209	3-958-389-01	CATCHER	
210	X-3944-599-1	BRAKE (S) ASSY, MAIN	
211	3-958-517-01	SPRING, TENSIONCOIL	
212	X-3944-628-1	BRAKE (T) ASSY, MAIN	
213	3-321-393-01	WASHER, STOPPER	
214	X-3944-363-1	ROLLER ASSY, HC	
215	X-3943-896-1	ARM ASSY, HC	
216	3-960-139-01	ARM, NEUTRALITY	
217	3-958-535-01	SPRING, TENSION	
218	3-960-138-01	ARM, PENDULUM COMPULSION	
219	X-3943-902-1	TABLE, REEL (S) ASSY	
220	X-3943-903-1	TABLE, REEL (T) ASSY	
221	X-3944-598-1	CAP ASSY, MAIN BRAKE	
222	3-961-441-01	SCREW (3X8)	
223	3-958-492-01	SPRING (TG1), TENSION COIL	
224	X-3943-886-1	TG1 ASSY	
225	3-669-595-00	WASHER (2), STOPPER	
226	A-6750-316-A	SHUTTLE (S) BLOCK ASSY	
227	X-3944-378-1	ROLLER ASSY, GUIDE	
228	3-962-874-01	O-RING	
229	3-960-687-01	SPRING, LEAF (S), LOADING	
230	3-960-720-01	SCREW	
231	A-6750-314-A	T BLOCK ASSY, SHUTTLE	
232	3-960-688-01	SPRING, LEAF (T), LOADING	
M901	8-848-624-12	DRUM ASSY (DZH-68A-R)	

5-1-6. MECHANISM DECK ASSEMBLY (3)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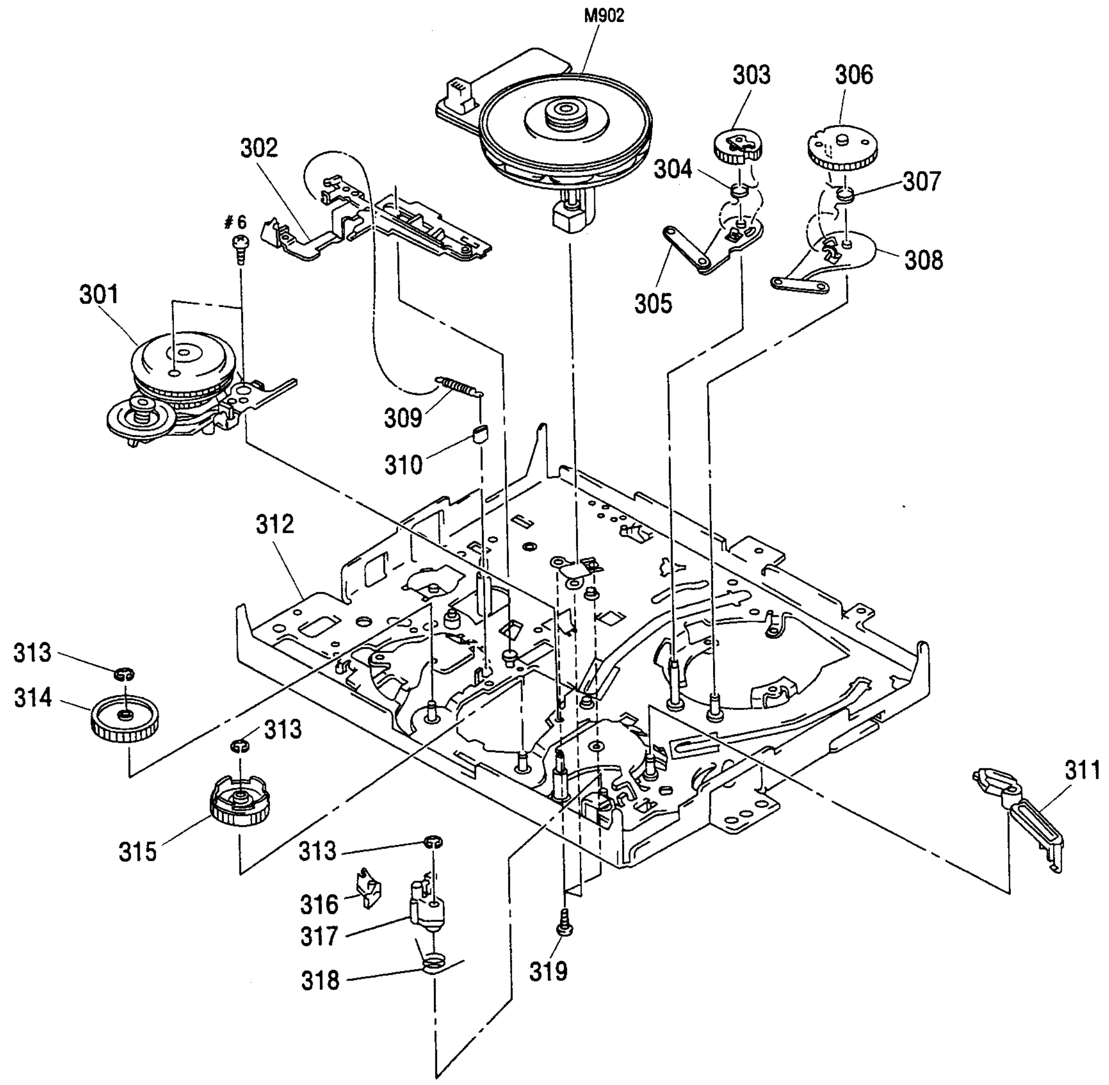
REF. NO.	PART NO.	DESCRIPTION	REMARK
251	3-959-840-01	RUBBER, JOINT	
252	3-958-159-01	WORM	
253	3-958-460-01	SPRING, ONE-WAY	
254	3-958-160-01	PROPELLOR	
255	3-958-155-01	BEARING, CAM MOTOR	
* 256	X-3943-884-1	CHASSIS ASSY, CAM MOTOR	
257	3-958-157-01	WHEEL, WORM	
258	3-669-595-00	WASHER (2), STOPPER	
259	1-762-076-11	SWITCH, ROTARY	
260	3-958-161-01	GEAR, CAM	
261	3-958-156-01	GEAR, FL DRIVING	
262	3-958-445-01	SPRING, TORSIONCOIL (CAP BRAKE)	
263	X-3943-888-1	BRAKE ASSY, CAP	
264	X-3943-889-1	ARM ASSY, TENSION VEHICLE	
265	3-958-361-01	BELT, TIMING	
266	3-958-448-01	WHEEL, TENSION	
* 267	3-959-763-01	RETAINER	
268	3-958-163-01	SLIDER, MAIN	
269	3-958-162-01	GEAR, UPPER/LOWER COMMUNICATION	
M903	X-3943-883-1	MOTOR ASSY, CAM	

5-1-7. MECHANISM DECK ASSEMBLY (4)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REF. NO.	PART NO.	DESCRIPTION	REMARK
301	A-6739-102-A	RKB BLOCK ASSY	
302	X-3943-897-1	LEVER ASSY, TRIGGER	
303	3-958-485-01	GEAR (T), LOADING	
304	3-960-449-01	SPRING (T), TORSION COIL	
305	X-3943-891-1	LEVER (T) ASSY, LOADING	
306	3-958-476-01	GEAR (S), LOADING	
307	3-960-448-01	SPRING (S), TORSION COIL	
308	X-3943-890-1	LEVER (S) ASSY, LOADING	
309	3-958-529-01	SPRING (MOMENT), TENSION	
310	3-959-840-01	RUBBER, JOINT	
311	3-958-504-01	ARM, FIXED RELEASE	
* 312	X-3943-874-1	CHASSIS ASSY, MECHANICAL	
313	3-669-595-00	WASHER (2), STOPPER	
314	3-962-960-01	GEAR (T-K), IDLER	
315	3-962-959-01	GEAR (S-K), IDLER	
316	3-958-533-01	CLAW, S WINDING	
317	3-958-532-01	ARM, S WINDING	
318	3-958-534-01	SPRING, TORSION	
319	3-960-272-01	SCREW (2.6)	
M902	1-698-409-11	MOTOR, DC (CAPSTAN)	

5-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA.. : μA.. uPA.. : μPA..
  uPB..: μPB.. uPC.. : μPC.. uPD.. : μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

The components identified by mark ⚠or dotted line with mark. ⚠ are critical for safety.
Replace only with part number specified.

- Abbreviations

Abbreviated model name	All model names
K862	K862CH/K862PS
K872	K872MN/K872PS
KH3	KH3CH/KH3ME/KH

REF.NO.	PART NO.	DESCRIPTION	REMARK
*	A-6782-618-A	CV-29 BOARD, COMPLETE (K862/K872)	
*	A-6782-630-A	CV-30 BOARD, COMPLETE (KH3)	
		*********************	
		(Ref. No 3,000 series)	
		< CAPACITOR >	
C501	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C502	1-126-967-11	ELECT 47uF 20% 10V	
C503	1-164-344-11	CERAMIC CHIP 0.068uF 10% 25V	
C504	1-124-248-00	ELECT 22uF 20% 35V	
C505	1-126-933-11	ELECT 100uF 20% 10V	
C506	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C507	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C508	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C509	1-124-925-11	ELECT 2.2uF 20% 100V	
C510	1-126-967-11	ELECT 47uF 20% 16V	
C511	1-124-925-11	ELECT 2.2uF 20% 100V	
		< CONNECTOR >	
CN501	1-564-013-21	PIN, CONNECTOR 3P	
CN502	1-573-829-11	CONNECTOR, BOARD TO BOARD 15P	
		< IC >	
IC501	8-759-246-14	IC TA8823N	
		< JUMPER RESISTOR >	
JR501	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR503	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR504	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR505	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR506	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L501	1-410-482-31	INDUCTOR 100uH	
		< RESISTOR >	
R501	1-216-268-00	METAL GLAZE 820K 5% 1/8W	
R502	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R503	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R504	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R505	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R506	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R507	1-216-037-00	METAL CHIP 330 5% 1/10W	
R508	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R509	1-216-659-11	METAL CHIP 2.2K 0.5%1/10W	
R510	1-216-651-11	METAL CHIP 1K 0.5%1/10W	
R511	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R526	1-216-659-11	METAL CHIP 2.2K 0.5%1/10W	
		< VARIABLE RESISTOR >	
RV591	1-241-787-11	RES, ADJ, CARBON 47K (AF SW POS)	
RV592	1-241-787-11	RES, ADJ, CARBON 47K (RF SW POS)	
*	1-656-965-11	DC-62 BOARD, COMPLETE (K862/K872)	
*	1-656-979-11	DC-63 BOARD, COMPLETE (KH3)	
		*********************	
		(Ref. No 3,000 series)	
		< CONNECTOR >	
* CN551	1-766-714-11	CONNECTOR, BOARD TO BOAR 5P	
CN552	1-766-713-11	CONNECTOR, BOARD TO BOAR 5P	
*	A-6721-619-A	HF-34 BOARD, COMPLETE	
		*********************	
		(Ref. No 3,000 series)	
		< CAPACITOR >	
C101	1-124-907-11	ELECT 10uF 20% 50V	
C102	1-124-907-11	ELECT 10uF 20% 50V	
C103	1-126-963-11	ELECT 4.7uF 20% 50V	
C104	1-126-963-11	ELECT 4.7uF 20% 50V	
C105	1-104-664-11	ELECT 47uF 20% 10V	
C106	1-104-664-11	ELECT 47uF 20% 10V	
C107	1-104-664-11	ELECT 47uF 20% 10V	
C108	1-126-962-11	ELECT 3.3uF 20% 50V	
C109	1-126-962-11	ELECT 3.3uF 20% 50V	
C110	1-126-962-11	ELECT 3.3uF 20% 50V	
C111	1-126-962-11	ELECT 3.3uF 20% 50V	
C112	1-126-233-11	ELECT 22uF 20% 50V	
C113	1-126-233-11	ELECT 22uF 20% 50V	
C114	1-124-252-00	ELECT 0.33uF 20% 50V	
C115	1-124-443-00	ELECT 100uF 20% 10V	
C116	1-124-443-00	ELECT 100uF 20% 10V	
C117	1-104-663-11	ELECT 33uF 20% 16V	
C118	1-137-372-11	FILM 0.022uF 5% 50V	
C119	1-137-372-11	FILM 0.022uF 5% 50V	
C120	1-137-370-11	FILM 0.01uF 5% 50V	

REF. NO.	PART NO.	DESCRIPTION	REMARK
C121	1-137-370-11	FILM 0.01uF 5% 50V	
C122	1-137-367-11	FILM 0.0033uF 5% 50V	
C123	1-137-367-11	FILM 0.0033uF 5% 50V	
C124	1-137-364-11	FILM 0.001uF 5% 50V	
C125	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C126	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C127	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C128	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C129	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C130	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C131	1-137-372-11	FILM 0.022uF 5% 50V	
C132	1-137-372-11	FILM 0.022uF 5% 50V	
C133	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C134	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C135	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		< CONNECTOR >	
* CN101	1-573-825-11	CONNECTOR, BOARD TO BOARD 11P	
* CN102	1-573-825-11	CONNECTOR, BOARD TO BOARD 11P	
* CN103	1-564-013-11	PIN, CONNECTOR 3P	
		< DIODE >	
D101	8-719-971-18	DIODE 1SS318	
		< IC >	
IC101	8-759-188-81	IC XLH7776K-VP	
		< TRANSISTOR >	
⚠Q101	8-729-822-09	TRANSISTOR 2SB1122-ST-TD	
⚠Q102	8-729-821-34	TRANSISTOR 2SD1802FAS-TL	
Q103	8-729-421-19	TRANSISTOR UN2213	
Q104	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R101	1-208-806-11	METAL GLAZE 10K 0.50% 1/10W	
R102	1-208-809-11	METAL GLAZE 13K 0.50% 1/10W	
R103	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R104	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R105	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R106	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R107	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R108	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R109	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R110	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R111	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R112	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R113	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R114	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R115	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R116	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R118	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R120	1-216-295-00	METAL CHIP 0 5% 1/10W	

REF. NO.	PART NO.	DESCRIPTION	REMARK
R123	1-216-295-00	METAL CHIP 0 5% 1/10W	
R124	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R125	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R130	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV101	1-241-764-11	RES, ADJ, CERMET 10K (PB RF BPF fo & HF/N BPF fo)	
RV102	1-241-763-11	RES, ADJ, CERMET 4.7K (VCO fo R)	
RV103	1-241-763-11	RES, ADJ, CERMET 4.7K (VCO fo L)	
RV104	1-241-885-11	RES, ADJ, CERMET 470K (MULTI VCO fo R)	
RV105	1-241-885-11	RES, ADJ, CERMET 470K (MULTI VCO fo L)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	A-6782-617-A	HI-17 BOARD, COMPLETE (K872MN)	
*	A-6782-700-A	HI-17 BOARD, COMPLETE (K872PS)	
*	A-6782-701-A	HI-17 BOARD, COMPLETE (K862)	
		**********************	
		(Ref. No 3,000 series)	
*	3-957-949-01	HOLDER, INDICATION TUBE	
		< BUZZER >	
BZ301	1-529-104-11	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C301	1-126-096-11	ELECT 10uF 20% 35V	
C302	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C303	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C304	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C305	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C306	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C307	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C308	1-163-102-00	CERAMIC CHIP 24PF 5% 50V	
C309	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C310	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C311	1-163-035-00	CERAMIC CHIP 0.047uF 50V	
C312	1-162-282-31	CERAMIC 100PF 10% 50V	
C313	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C314	1-128-057-11	ELECT 330uF 20% 6.3V	
C315	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C316	1-125-705-11	CAP, DOUBLE LAYERS 0.22F	
C320	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C321	1-162-306-11	CERAMIC 0.01uF 20% 16V	
		< CONNECTOR >	
* CN301	1-563-326-11	SOCKET, CONNECTOR 6P	
* CN302	1-764-211-11	CONNECTOR, BOARD TO BOARD 13P	
CN303	1-691-051-21	HOUSING, CONNECTOR 19P	
CN304	1-691-051-21	HOUSING, CONNECTOR 19P	
CN305	1-506-469-11	PIN, CONNECTOR 4P	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

HI-17

REF. NO.	PART NO.	DESCRIPTION	REMARK
CN307	1-569-339-11	CONNECTOR, BOARD TO BOARD 7P	
		< DIODE >	
D301	8-719-109-93	DIODE RD6.2ES-B2	
D302	8-719-109-93	DIODE RD6.2ES-B2	
D303	8-719-109-93	DIODE RD6.2ES-B2	
D304	8-719-109-93	DIODE RD6.2ES-B2	
D305	8-719-110-08	DIODE RD8.2ES-B2	
D306	8-719-108-12	DIODE RD9.1E-W	
D307	8-719-109-93	DIODE RD6.2ES-B2	
D309	8-719-108-12	DIODE RD9.1E-W	
D311	8-719-045-62	DIODE SLR-342VC-A-47 (STANBY)	
D312	8-719-108-12	DIODE RD9.1E-W	
D313	8-719-911-19	DIODE 1SS119-25	
D314	8-719-200-82	DIODE 11ES2	
D315	8-719-108-12	DIODE RD9.1E-W	
D316	8-719-045-64	DIODE SLR-342MC-A-47 (POWER)	
D317	8-719-045-64	DIODE SLR-342MC-A-47 (POWER)	
D320	8-719-109-93	DIODE RD6.2ES-B2	
D321	8-719-109-93	DIODE RD6.2ES-B2	
D322	8-719-109-93	DIODE RD6.2ES-B2	
D323	8-719-109-93	DIODE RD6.2ES-B2	
		< IC >	
IC301	8-759-279-61	IC ST93CS66B1	
IC302	8-759-357-03	IC MB89096PF-G-201(182)-BND	
IC303	8-759-248-87	IC MM1256XF-BE	
IC304	1-466-833-11	IC RAY-CATCHER BLOCK, REMOCON	
		< JUMPER RESISTOR >	
JR302	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR303	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR304	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR305	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR306	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR307	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR309	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR310	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR311	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR312	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR313	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR314	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR315	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR316	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR317	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR318	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR319	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR320	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR321	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR322	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L302	1-414-183-41	INDUCTOR 10uH	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< FLUORESCENT INDICATOR >	
ND301	1-517-296-31	INDICATOR TUBE, FLUORESCENT	
		< JACK >	
PJ301	1-695-865-21	JACK, PIN 3P (LINE IN 2)	
		< TRANSISTOR >	
Q303	8-729-900-51	TRANSISTOR DTA114TK	
Q304	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R301	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R302	1-216-033-00	METAL CHIP 220 5% 1/10W	
R303	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R304	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R305	1-216-229-00	METAL GLAZE 20K 5% 1/8W	
R306	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R308	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R310	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R311	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R312	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R313	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R314	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R315	1-216-064-00	METAL CHIP 4.3K 5% 1/10W (K872MN)	
R315	1-216-295-00	METAL CHIP 0 5% 1/10W (K862/K872PS)	
R316	1-216-073-00	METAL CHIP 10K 5% 1/10W (K862PS/K872:MN)	
R317	1-216-088-00	METAL CHIP 43K 5% 1/10W (K862)	
R318	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R319	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R320	1-216-295-00	METAL CHIP 0 5% 1/10W	
R321	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R322	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R323	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R324	1-216-033-00	METAL CHIP 220 5% 1/10W	
R325	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R326	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R327	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R328	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R329	1-216-295-00	METAL CHIP 0 5% 1/10W	
R330	1-216-295-00	METAL CHIP 0 5% 1/10W	
R331	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R332	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R333	1-216-198-91	METAL GLAZE 1K 5% 1/8W	
R338	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R339	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R340	1-249-417-11	CARBON 1K 5% 1/4W	F
R341	1-216-073-00	METAL CHIP 10K 5% 1/10W	

REF. NO.	PART NO.	DESCRIPTION	REMARK
R342	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R343	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R344	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R345	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R346	1-216-022-00	METAL CHIP 75 5% 1/10W	
R347	1-216-295-00	METAL CHIP 0 5% 1/10W	
R348	1-216-035-00	METAL CHIP 270 5% 1/10W	
R349	1-216-295-00	METAL CHIP 0 5% 1/10W	
R350	1-216-295-00	METAL CHIP 0 5% 1/10W	
R351	1-216-021-00	METAL CHIP 68 5% 1/10W	
R352	1-216-296-00	METAL CHIP 0 5% 1/8W	
R353	1-216-296-00	METAL CHIP 0 5% 1/8W	
R354	1-216-296-00	METAL CHIP 0 5% 1/8W	
R355	1-216-296-00	METAL CHIP 0 5% 1/8W	
R356	1-216-296-00	METAL CHIP 0 5% 1/8W	
R357	1-216-296-00	METAL CHIP 0 5% 1/8W	
R358	1-216-296-00	METAL CHIP 0 5% 1/8W	
R359	1-216-295-00	METAL CHIP 0 5% 1/10W	
R360	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R363	1-216-296-00	METAL CHIP 0 5% 1/8W	

< SWITCH >

REF. NO.	PART NO.	DESCRIPTION	REMARK
S301	1-571-977-11	SWITCH, TACTIL (ON/STANDBY)	
S302	1-571-977-11	SWITCH, TACTIL (⏏ EJECT)	

< VIBRATOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
X301	1-579-126-11	VIBRATOR, CERAMIC (12MHz)	
X302	1-579-436-11	VIBLATOR, CRYSTAL (32kHz)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	A-6782-629-A	HI-18 BOARD, COMPLETE (KH3)	

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(Ref. No 4,000 series)

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	3-964-596-01	HOLDER, INDICATIONTUBE	

< CAPACITOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
C301	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C302	1-124-589-11	ELECT 47uF 20% 16V	
C303	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C304	1-126-096-11	ELECT 10uF 20% 35V	
C305	1-126-096-11	ELECT 10uF 20% 35V	
C306	1-126-096-11	ELECT 10uF 20% 35V	
C307	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C308	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C309	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C310	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C315	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C317	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C318	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C319	1-163-197-00	CERAMIC CHIP 470PF 5% 50V	

< CONNECTOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
CN301	1-770-018-11	CONNECTOR, BOARD TO BOARD 19P	
* CN302	1-695-823-11	CONNECTOR, BOARD TO BOARD 8P	
CN303	1-563-624-11	HOUSING, CONNECTOR 21P	
CN304	1-691-051-21	HOUSING, CONNECTOR 19P	
CN305	1-691-051-21	HOUSING, CONNECTOR 19P	

< DIODE >

REF. NO.	PART NO.	DESCRIPTION	REMARK
D301	8-719-200-82	DIODE 11ES2	
D302	8-719-110-08	DIODE RD8.2ES-B2	
D303	8-719-911-19	DIODE 1SS119-25	
D304	8-719-911-19	DIODE 1SS119-25	
D305	8-719-911-19	DIODE 1SS119-25	
D306	8-719-911-19	DIODE 1SS119-25	
D307	8-719-911-19	DIODE 1SS119-25	
D308	8-719-911-19	DIODE 1SS119-25	
D309	8-719-911-19	DIODE 1SS119-25	
D310	8-719-911-19	DIODE 1SS119-25	
D313	8-719-108-12	DIODE RD9.1E-W	
D314	8-719-108-12	DIODE RD9.1E-W	
D316	8-719-108-12	DIODE RD9.1E-W	
D317	8-719-045-62	DIODE SLR-342VC-A-47 (STANBY)	
D319	8-719-108-12	DIODE RD9.1E-W	
D320	8-719-045-64	DIODE SLR-342MC-A-47 (POWER)	
D321	8-719-045-64	DIODE SLR-342MC-A-47 (POWER)	
D322	8-719-108-12	DIODE RD9.1E-W	
D323	8-719-108-12	DIODE RD9.1E-W	
D324	8-719-108-12	DIODE RD9.1E-W	

< IC >

REF. NO.	PART NO.	DESCRIPTION	REMARK
IC301	8-752-837-20	IC CXP2201AQ	
IC302	1-466-833-11	IC RAY-CATCHER BLOCK, REMOCON	

< JUMPER RESISTOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
JR301	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR302	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR303	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR305	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR306	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR307	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR308	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR309	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR310	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR311	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR312	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR313	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

REF. NO.	PART NO.	DESCRIPTION	REMARK
L301	1-414-189-31	INDUCTOR 100uH	
L304	1-414-183-41	INDUCTOR 10uH	
L305	1-414-183-41	INDUCTOR 10uH	
L323	1-410-501-11	INDUCTOR 2.2uH	

REF. NO.	PART NO.	DESCRIPTION	REMARK
L324	1-410-501-11	INDUCTOR 2.2uH	
L325	1-410-501-11	INDUCTOR 2.2uH	
L329	1-410-501-11	INDUCTOR 2.2uH	
L331	1-410-501-11	INDUCTOR 2.2uH	
L335	1-410-501-11	INDUCTOR 2.2uH	
L336	1-410-501-11	INDUCTOR 2.2uH	
L337	1-410-501-11	INDUCTOR 2.2uH	
L338	1-410-501-11	INDUCTOR 2.2uH	
L348	1-410-513-11	INDUCTOR 22uH	
L350	1-410-513-11	INDUCTOR 22uH	
		< FLUORESCENT INDICATOR >	
ND301	1-810-294-21	INDICATOR TUBE, FLUORESCENT	
		< JACK >	
PJ301	1-750-985-11	JACK, PIN 6P (INPUT/OUTPUT)	
		< TRANSISTOR >	
Q301	8-729-900-51	TRANSISTOR DTA114TK	
Q302	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R301	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R302	1-249-417-11	CARBON 1K 5% 1/4W	F
R303	1-249-417-11	CARBON 1K 5% 1/4W	F
R304	1-249-417-11	CARBON 1K 5% 1/4W	F
R305	1-249-417-11	CARBON 1K 5% 1/4W	F
R307	1-216-295-00	METAL CHIP 0 5% 1/10W	
R309	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R310	1-216-295-00	METAL CHIP 0 5% 1/10W	
R311	1-216-022-00	METAL CHIP 75 5% 1/10W	
R312	1-216-035-00	METAL CHIP 270 5% 1/10W	
R313	1-216-021-00	METAL CHIP 68 5% 1/10W	
R314	1-216-295-00	METAL CHIP 0 5% 1/10W	
R315	1-216-295-00	METAL CHIP 0 5% 1/10W	
R316	1-216-295-00	METAL CHIP 0 5% 1/10W	
R317	1-216-295-00	METAL CHIP 0 5% 1/10W	
R318	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< SWITCH >	
S301	1-571-977-11	SWITCH, TACTIL (ON/STANDBY)	
S302	1-571-977-11	SWITCH, TACTIL (INPUT SELECT)	
S303	1-571-977-11	SWITCH, TACTIL (⏏ EJECT)	
S305	1-571-977-11	SWITCH, TACTIL (TAPE SPEED)	
		< VIBRATOR >	
X301	1-577-101-11	VIBRATOR, CERAMIC (4.19MHz)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	A-6782-613-A	KR-31 BOARD, COMPLETE (K862/K872)	
*	A-6782-639-A	KR-31 BOARD, COMPLETE (KH3)	
		**********************	
		(Ref. No 5,000 series)	
		< CAPACITOR >	
C501	1-126-933-11	ELECT 100uF 20% 16V	
C504	1-128-551-11	ELECT 22uF 20% 25V	
C505	1-164-299-11	CERAMIC CHIP 0.22uF 10% 25V	
C506	1-126-934-11	ELECT 220uF 20% 16V	
C507	1-124-925-11	ELECT 2.2uF 20% 100V	
C508	1-128-551-11	ELECT 22uF 20% 25V	
C509	1-124-925-11	ELECT 2.2uF 20% 100V	
C510	1-124-925-11	ELECT 2.2uF 20% 100V	
C512	1-128-551-11	ELECT 22uF 20% 25V	
C513	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C514	1-128-551-11	ELECT 22uF 20% 25V	
C515	1-165-320-11	CERAMIC CHIP 0.47uF 10% 16V	
C516	1-126-964-11	ELECT 10uF 20% 50V	
C517	1-128-551-11	ELECT 22uF 20% 25V	
C518	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C519	1-128-551-11	ELECT 22uF 20% 25V	
C520	1-164-299-11	CERAMIC CHIP 0.22uF 10% 25V	
C521	1-126-964-11	ELECT 10uF 20% 50V	
C522	1-126-964-11	ELECT 10uF 20% 50V	
C523	1-126-964-11	ELECT 10uF 20% 50V	
C524	1-124-925-11	ELECT 2.2uF 20% 100V	
C525	1-128-551-11	ELECT 22uF 20% 25V	
C526	1-128-551-11	ELECT 22uF 20% 25V	
C527	1-124-925-11	ELECT 2.2uF 20% 100V	
C530	1-126-964-11	ELECT 10uF 20% 50V	
C531	1-126-964-11	ELECT 10uF 20% 50V	
C536	1-126-964-11	ELECT 10uF 20% 50V	
C539	1-126-964-11	ELECT 10uF 20% 50V	
C540	1-126-964-11	ELECT 10uF 20% 50V	
C541	1-163-033-91	CERAMIC CHIP 0.022uF 50V	
C544	1-163-033-91	CERAMIC CHIP 0.022uF 50V	
C547	1-126-964-11	ELECT 10uF 20% 50V	
C550	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C551	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C552	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C556	1-126-964-11	ELECT 10uF 20% 50V	
C557	1-126-964-11	ELECT 10uF 20% 50V	
C558	1-126-964-11	ELECT 10uF 20% 50V	
C559	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C560	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C561	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C562	1-126-966-11	ELECT 33uF 20% 16V	
C563	1-126-966-11	ELECT 33uF 20% 16V	
C564	1-126-966-11	ELECT 33uF 20% 16V	
C565	1-163-133-00	CERAMIC CHIP 470uF 5% 50V	
C566	1-163-133-00	CERAMIC CHIP 470uF 5% 50V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C567	1-163-133-00	CERAMIC CHIP 470uF 5% 50V	
C568	1-163-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C569	1-163-239-11	CERAMIC CHIP 33PF 5% 50V	
C570	1-126-924-11	ELECT 330uF 20% 6.3V	
C572	1-163-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C573	1-163-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C574	1-126-924-11	ELECT 330uF 20% 6.3V	
C576	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C577	1-163-220-11	CERAMIC CHIP 3PF 50V	
C578	1-163-222-11	CERAMIC CHIP 5PF 50V	
C579	1-163-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C580	1-165-320-11	CERAMIC CHIP 0.47uF 10% 16V	
C582	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C583	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C584	1-164-699-11	CERAMIC CHIP 0.0033uF 5% 50V	
C585	1-164-699-11	CERAMIC CHIP 0.0033uF 5% 50V	
C587	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C588	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C589	1-126-964-11	ELECT 10uF 20% 50V	
C590	1-126-964-11	ELECT 10uF 20% 50V	
C591	1-126-964-11	ELECT 10uF 20% 50V	
C592	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C593	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C594	1-164-693-11	CERAMIC CHIP 1800PF 5% 50V	
C595	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C596	1-164-693-11	CERAMIC CHIP 1800PF 5% 50V	
C597	1-126-964-11	ELECT 10uF 20% 50V	
C598	1-163-119-00	CERAMIC CHIP 120PF 5% 50V	
C600	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C601	1-126-964-11	ELECT 10uF 20% 50V	
C605	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C606	1-126-964-11	ELECT 10uF 20% 50V	
C607	1-126-924-11	ELECT 330uF 20% 6.3V	
C610	1-126-934-11	ELECT 220uF 20% 16V	
C611	1-126-934-11	ELECT 220uF 20% 16V	
C620	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C621	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C622	1-107-682-11	CERAMIC CHIP 1uF 10% 16V	
C623	1-163-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C625	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C628	1-126-964-11	ELECT 10uF 20% 50V	
C640	1-163-059-11	CERAMIC CHIP 0.01uF 10% 50V	
C651	1-163-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C652	1-164-159-11	CERAMIC 0.1uF 50V	
C653	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C655	1-128-551-11	ELECT 22uF 20% 25V	
C656	1-126-964-11	ELECT 10uF 20% 50V	
C657	1-126-964-11	ELECT 10uF 20% 50V	
C658	1-128-551-11	ELECT 22uF 20% 25V	

< CONNECTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN501	1-568-788-21	PIN, CONNECTOR 11P	(K862/K872)
* CN501	1-573-128-11	PIN, CONNECTOR 5P	(KH3)
CN503	1-506-475-11	PIN, CONNECTOR 10P	
CN505	1-691-055-21	HOUSING, CONNECTOR 23P	
* CN506	1-573-128-11	PIN, CONNECTOR 5P	

< DIODE >

REF.NO.	PART NO.	DESCRIPTION	REMARK
D501	8-719-200-82	DIODE 11ES2	
D502	8-719-200-82	DIODE 11ES2	
D504	8-719-800-76	DIODE 1SS226	
D505	8-719-914-43	DIODE DAN202K	
D506	8-719-109-85	DIODE RD5.1ES-B2	
D514	8-719-109-85	DIODE RD5.1ES-B2	
D515	8-719-800-76	DIODE 1SS226	
D516	8-719-109-85	DIODE RD5.1ES-B2	
D517	8-719-109-85	DIODE RD5.1ES-B2	
D518	8-719-017-09	DIODE 02DZ6.2-TPH3	(K862/K872)
D519	8-719-017-09	DIODE 02DZ6.2-TPH3	(K862/K872)
D601	8-719-200-82	DIODE 11ES2	
⚠D602	8-719-210-16	DIODE 11ES2-TA2B	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB501	1-410-396-71	INDUCTOR 0.45uH	

< FERRITE BEAD >

REF.NO.	PART NO.	DESCRIPTION	REMARK
FB502	1-543-256-11	FERRITE BEAD	

< IC >

REF.NO.	PART NO.	DESCRIPTION	REMARK
IC501	8-759-988-36	IC BA14741F	
⚠IC502	8-759-933-22	IC BA3707	
IC503	8-759-909-71	IC BA4558F	
IC505	8-759-988-36	IC BA14741F	
IC508	8-759-932-67	IC BU4053BF	
IC509	8-759-097-80	IC HD49783FP	
IC510	8-759-932-67	IC BU4053BF	
IC511	8-759-295-89	IC LC83025E	
IC512	8-759-988-36	IC BA14741F	
IC513	8-759-243-09	IC TC74AC74F	
IC514	8-759-262-35	IC LC32464P-80	
IC515	8-759-988-36	IC BA14741F	

< JUMPER RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR100	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR107	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR200	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR201	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR202	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR203	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR204	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR205	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR206	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR208	1-216-295-00	METAL CHIP 0 5% 1/10W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

KR-31

REF.NO.	PART NO.	DESCRIPTION			REMARK
JR210	1-216-295-00	METAL CHIP	0	5%	1/10W
JR211	1-216-296-00	METAL CHIP	0	5%	1/8W
JR212	1-216-296-00	METAL CHIP	0	5%	1/8W
JR213	1-216-296-00	METAL CHIP	0	5%	1/8W
JR214	1-216-295-00	METAL CHIP	0	5%	1/10W
JR215	1-216-296-00	METAL CHIP	0	5%	1/8W
JR216	1-216-296-00	METAL CHIP	0	5%	1/8W
JR217	1-216-296-00	METAL CHIP	0	5%	1/8W
JR218	1-216-296-00	METAL CHIP	0	5%	1/8W
JR219	1-216-296-00	METAL CHIP	0	5%	1/8W
JR220	1-216-296-00	METAL CHIP	0	5%	1/8W
JR221	1-216-295-00	METAL CHIP	0	5%	1/10W
JR222	1-216-296-00	METAL CHIP	0	5%	1/8W
JR223	1-216-295-00	METAL CHIP	0	5%	1/10W
JR224	1-216-296-00	METAL CHIP	0	5%	1/8W
JR226	1-216-296-00	METAL CHIP	0	5%	1/8W
JR227	1-216-295-00	METAL CHIP	0	5%	1/10W
JR228	1-216-296-00	METAL CHIP	0	5%	1/8W
JR231	1-216-296-00	METAL CHIP	0	5%	1/8W
JR234	1-216-296-00	METAL CHIP	0	5%	1/8W
JR236	1-216-295-00	METAL CHIP	0	5%	1/10W
JR241	1-216-295-00	METAL CHIP	0	5%	1/10W
JR242	1-216-296-00	METAL CHIP	0	5%	1/8W
JR244	1-216-295-00	METAL CHIP	0	5%	1/10W
JR246	1-216-296-00	METAL CHIP	0	5%	1/8W
JR254	1-216-295-00	METAL CHIP	0	5%	1/10W
JR291	1-216-295-00	METAL CHIP	0	5%	1/10W
JR292	1-216-295-00	METAL CHIP	0	5%	1/10W
JR293	1-216-296-00	METAL CHIP	0	5%	1/8W
JR294	1-216-296-00	METAL CHIP	0	5%	1/8W
JR296	1-216-295-00	METAL CHIP	0	5%	1/10W
JR297	1-216-295-00	METAL CHIP	0	5%	1/10W
JR298	1-216-295-00	METAL CHIP	0	5%	1/10W
JR299	1-216-295-00	METAL CHIP	0	5%	1/10W
JR300	1-216-295-00	METAL CHIP	0	5%	1/10W

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
⚠L502	1-408-611-21	INDUCTOR 47uH	
L503	1-410-506-11	INDUCTOR 5.6uH	
L505	1-408-409-00	INDUCTOR 10uH	
L506	1-408-409-00	INDUCTOR 10uH	
L507	1-408-409-00	INDUCTOR 10uH	
L508	1-410-330-31	INDUCTOR 22uH	
L601	1-408-409-00	INDUCTOR 10uH	
⚠L602	1-408-603-21	INDUCTOR 10uH	
L603	1-414-183-41	INDUCTOR 10uH	

< TRANSISTOR >

REF.NO.	PART NO.	DESCRIPTION		REMARK
Q501	8-729-421-19	TRANSISTOR	UN2213	
Q503	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q504	8-729-421-19	TRANSISTOR	UN2213	
Q506	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q507	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q508	8-729-421-19	TRANSISTOR	UN2213	
Q509	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q510	8-729-424-08	TRANSISTOR	UN2111	
Q511	8-729-421-19	TRANSISTOR	UN2213	
Q512	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q513	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q514	8-729-421-19	TRANSISTOR	UN2213	
Q526	8-729-120-28	TRANSISTOR	2SC1623-L5L6	(K862/K872)
Q527	8-729-216-22	TRANSISTOR	2SA1162-G	(K862/K872)
Q528	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q529	8-729-120-28	TRANSISTOR	2SC1623-L5L6	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION			REMARK
R500	1-216-296-00	METAL CHIP	0	5%	1/8W (KH3)
R504	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R505	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R506	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R507	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R508	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R509	1-216-091-00	METAL CHIP	56K	5%	1/10W
R510	1-216-091-00	METAL CHIP	56K	5%	1/10W
R512	1-216-073-00	METAL CHIP	10K	5%	1/10W
R513	1-216-073-00	METAL CHIP	10K	5%	1/10W
R514	1-216-043-91	METAL CHIP	560	5%	1/10W
R515	1-216-097-00	METAL CHIP	100K	5%	1/10W
R516	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R517	1-216-075-00	METAL CHIP	12K	5%	1/10W
R518	1-216-073-00	METAL CHIP	10K	5%	1/10W
R519	1-216-097-00	METAL CHIP	100K	5%	1/10W
R520	1-216-075-00	METAL CHIP	12K	5%	1/10W
R521	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R524	1-216-049-00	METAL CHIP	1K	5%	1/10W
R525	1-216-073-00	METAL CHIP	10K	5%	1/10W
R528	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R529	1-216-073-00	METAL CHIP	10K	5%	1/10W
R531	1-216-089-00	METAL CHIP	47K	5%	1/10W
R532	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R534	1-216-089-00	METAL CHIP	47K	5%	1/10W
R535	1-216-085-00	METAL CHIP	33K	5%	1/10W
R536	1-216-073-00	METAL CHIP	10K	5%	1/10W
R537	1-216-073-00	METAL CHIP	10K	5%	1/10W
R538	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R539	1-216-079-00	METAL CHIP	18K	5%	1/10W
R540	1-216-081-00	METAL CHIP	22K	5%	1/10W
R541	1-216-095-00	METAL CHIP	82K	5%	1/10W
R542	1-216-079-00	METAL CHIP	18K	5%	1/10W
R543	1-216-073-00	METAL CHIP	10K	5%	1/10W
R544	1-216-073-00	METAL CHIP	10K	5%	1/10W
R545	1-216-073-00	METAL CHIP	10K	5%	1/10W
R546	1-216-043-91	METAL GLAZE	560	5%	1/10W
R547	1-216-081-00	METAL CHIP	22K	5%	1/10W

The components ident
mark ⚠ or dotted line
mark. ⚠ are critical f
safety. Replace only v
part number specified

REF. NO.	PART NO.	DESCRIPTION	REMARK
R548	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R549	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R550	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R551	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R552	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R553	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R554	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R555	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(K862/K872)
R556	1-216-049-00	METAL CHIP 1K 5% 1/10W	(K862/K872)
R559	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R560	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R561	1-216-025-00	METAL CHIP 100 5% 1/10W	
R565	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R566	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R567	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R568	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R569	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R570	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R571	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R572	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R573	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	
R574	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R575	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	
R576	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R577	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	
R579	1-216-098-00	METAL CHIP 110K 5% 1/10W	
R580	1-216-074-00	METAL CHIP 11K 5% 1/10W	
R581	1-216-098-00	METAL CHIP 110K 5% 1/10W	
R582	1-216-074-00	METAL CHIP 11K 5% 1/10W	
R583	1-216-098-00	METAL CHIP 110K 5% 1/10W	
R584	1-216-074-00	METAL CHIP 11K 5% 1/10W	
R586	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	
R587	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	
R588	1-216-050-00	METAL GLAZE 1.1K 5% 1/10W	
R589	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R590	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R591	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R592	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R593	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R594	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R595	1-216-096-00	METAL GLAZE 91K 5% 1/10W	
R596	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R597	1-216-228-00	METAL GLAZE 18K 5% 1/8W	
R598	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R599	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R600	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R601	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R602	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R603	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R604	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R605	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R606	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R608	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R610	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R611	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R612	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R613	1-216-066-00	METAL CHIP 5.1K 5% 1/10W	
R614	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R615	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R616	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R620	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R621	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R624	1-216-230-00	METAL GLAZE 22K 5% 1/8W	
R625	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R626	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R657	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R658	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R659	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R660	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R661	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R662	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R663	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R664	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R665	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R666	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R667	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R668	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R669	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R670	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R671	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R672	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R673	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R674	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R675	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R676	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R677	1-216-689-11	METAL CHIP 39K 0.5%1/10W	
R678	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R679	1-216-689-11	METAL CHIP 39K 0.5%1/10W	
		< VIBRATOR >	
X502	1-579-834-11	VIBRATOR, CRYSTAL (33MHz)	

*	A-6782-616-A	MA-232 BOARD, COMPLETE (K872MN)
*	A-6782-619-A	MA-232 BOARD, COMPLETE (K872PS)
*	A-6782-620-A	MA-232 BOARD, COMPLETE (K862)

****

(Ref. No 1,000 series)

*	3-960-273-01	SPACER, TOPEND
*	3-960-274-01	SPACER, LED

< CAPACITOR >

REF. NO.	PART NO.	DESCRIPTION				REMARK
C210	1-124-584-00	ELECT	100uF	20%	10V	
C211	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C212	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C213	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C214	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C215	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C241	1-124-464-11	ELECT	0.22uF	20%	50V	
C242	1-124-464-11	ELECT	0.22uF	20%	50V	
C251	1-126-096-11	ELECT	10uF	20%	35V	
C252	1-126-096-11	ELECT	10uF	20%	35V	
C253	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C254	1-124-589-11	ELECT	47uF	20%	16V	
C255	1-130-489-00	MYLAR	0.033uF	5%	50V	
C256	1-137-441-11	FILM	0.027uF	5%	50V	
C261	1-124-635-00	ELECT	220uF	20%	6.3V	
C262	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C263	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C264	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V	
C265	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C266	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C267	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C271	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C272	1-124-589-11	ELECT	47uF	20%	16V	
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C275	1-163-077-91	CERAMIC CHIP	0.1uF		50V	
C291	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C292	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C293	1-163-077-91	CERAMIC CHIP	0.1uF		50V	
C294	1-124-455-00	ELECT	100uF	20%	16V	
C295	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C296	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C297	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C351	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C352	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V	
C353	1-124-464-11	ELECT	0.22uF	20%	50V	
C361	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C362	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C401	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C402	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C404	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C405	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	
C406	1-124-584-00	ELECT	100uF	20%	10V	
C407	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C408	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C409	1-124-584-00	ELECT	100uF	20%	10V	
C410	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C411	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C413	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C414	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C416	1-124-257-00	ELECT	2.2uF	20%	50V	
C417	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C418	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C419	1-124-589-11	ELECT	47uF	20%	16V	
C420	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C421	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C422	1-126-160-11	ELECT	1uF	20%	50V	
C423	1-163-139-00	CERAMIC CHIP	820PF	5%	50V	
C424	1-124-589-11	ELECT	47uF	20%	16V	
C425	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C427	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C600	1-126-967-11	ELECT	47uF	20%	10V	
C601	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C602	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C603	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C605	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C611	1-126-967-11	ELECT	47uF	20%	10V	
C612	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C621	1-126-967-11	ELECT	47uF	20%	10V	
C622	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C651	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C652	1-126-967-11	ELECT	47uF	20%	10V	
C655	1-126-935-11	ELECT	470uF	20%	6.3V	
C657	1-126-967-11	ELECT	47uF	20%	10V	
C661	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C662	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V	
C671	1-126-967-11	ELECT	47uF	20%	10V	
C681	1-124-257-00	ELECT	2.2uF	20%	50V	
C691	1-124-257-00	ELECT	2.2uF	20%	50V	
C703	1-124-261-00	ELECT	10uF	20%	50V	
C704	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C705	1-124-261-00	ELECT	10uF	20%	50V	
C706	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C707	1-126-967-11	ELECT	47uF	20%	16V	
C708	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C711	1-126-933-11	ELECT	100uF	20%	16V	
C712	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C713	1-126-967-11	ELECT	47uF	20%	10V	
C714	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C715	1-126-967-11	ELECT	47uF	20%	10V	
C716	1-124-261-00	ELECT	10uF	20%	50V	
C717	1-124-261-00	ELECT	10uF	20%	50V	
C718	1-124-248-00	ELECT	22uF	20%	35V	
C721	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C727	1-124-589-11	ELECT	47uF	20%	16V	
C728	1-124-455-00	ELECT	100uF	20%	16V	
C729	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C851	1-162-772-11	CERAMIC	0.1uF	10%	25V	
C852	1-162-772-11	CERAMIC	0.1uF	10%	25V	
C854	1-124-903-11	ELECT	1uF	20%	50V	
C855	1-164-159-11	CERAMIC	0.1uF		50V	
C856	1-137-370-11	FILM	0.[illegible]uF	5%	50V	
C857	1-124-927-11	ELECT	4.7uF	20%	100V	

REF. NO.	PART NO.	DESCRIPTION	REMARK
C858	1-126-111-11	ELECT 3.3uF 20% 50V	
C859	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C860	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C861	1-124-257-00	ELECT 2.2uF 20% 50V	
C862	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C863	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C864	1-128-551-11	ELECT 22uF 20% 25V	
C865	1-128-551-11	ELECT 22uF 20% 25V	
C866	1-124-252-00	ELECT 0.33uF 20% 50V	
C867	1-126-964-11	ELECT 10uF 20% 50V	
C881	1-137-612-11	FILM 0.0068uF 5% 100V	
C882	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C883	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C884	1-126-933-11	ELECT 100uF 20% 16V	
C889	1-137-453-11	FILM 560PF 5% 100V	
C891	1-104-697-11	FILM 0.047uF 5% 100V	
C892	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C893	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C894	1-126-933-11	ELECT 100uF 20% 16V	
C902	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C903	1-124-584-00	ELECT 100uF 20% 10V	
C904	1-163-038-00	CERAMIC CHIP 0.1uF 25V	

< JACK >

REF. NO.	PART NO.	DESCRIPTION	REMARK
CJ602	1-764-222-11	JACK, PIN 6P (LINE 1 IN/OUT)	

< CONNECTOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
* CN271	1-766-538-11	CONNECTOR, BOARD TO BOARD 8P	
* CN275	1-766-717-11	CONNECTOR, BOARD TO BOARD 5P	
* CN281	1-766-537-11	CONNECTOR (HMD) 5P	
* CN291	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P	
CN601	1-506-475-11	PIN, CONNECTOR 10P	
CN881	1-506-469-11	PIN, CONNECTOR 4P	
* CN882	1-560-891-00	PIN, CONNECTOR 3P	
CN891	1-573-780-11	PIN, CONNECTOR (PC BOARD) 6P	
* CN901	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	
* CN902	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	
CN904	1-766-992-11	CONNECTOR, FFC/FPC 19P	
CN905	1-766-992-11	CONNECTOR, FFC/FPC 19P	
CN906	1-573-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN907	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P	
CN908	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P	
CN910	1-770-017-11	CONNECTOR, BOARD TO BOARD 19P	
CN911	1-766-996-41	CONNECTOR, FFC/FPC 23P	

< DIODE >

REF. NO.	PART NO.	DESCRIPTION	REMARK
D202	8-719-200-82	DIODE 11ES2	
D206	8-719-801-78	DIODE 1SS184	
D243	8-719-104-34	DIODE 1S2836	
D251	8-719-801-78	DIODE 1SS184	
D261	8-719-048-26	DIODE GL528V1 (T/S)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
D265	8-719-109-93	DIODE RD6.2ES-B2	
D267	8-719-109-93	DIODE RD6.2ES-B2	
D291	8-719-110-14	DIODE RD9.1ES-B3	
D402	8-719-801-78	DIODE 1SS184	
D403	8-719-801-78	DIODE 1SS184	
D601	8-719-801-78	DIODE 1SS184	
D602	8-719-801-78	DIODE 1SS184	
D661	8-719-109-74	DIODE RD4.3ES-B1	
D662	8-719-109-74	DIODE RD4.3ES-B1	
D663	8-719-109-74	DIODE RD4.3ES-B1	
D664	8-719-109-74	DIODE RD4.3ES-B1	
D671	8-719-109-92	DIODE RD6.2ES-B1	
D681	8-719-400-10	DIODE MA153-TX	
D691	8-719-400-10	DIODE MA153-TX	
△D702	8-719-400-10	DIODE MA153-TX	
△D703	8-719-113-94	DIODE RD33ES-T1B3	
D709	8-719-109-85	DIODE RD5.1ES-B2	
D710	8-719-801-78	DIODE 1SS184	
D745	8-719-801-78	DIODE 1SS184	
D851	8-719-801-78	DIODE 1SS184	
D854	8-719-801-78	DIODE 1SS184	
D902	8-719-200-82	DIODE 11ES2	
D904	8-719-991-75	DIODE RB425D	
D910	8-719-109-93	DIODE RD6.2ES-B2	
D911	8-719-109-93	DIODE RD6.2ES-B2	
D912	8-719-109-93	DIODE RD6.2ES-B2	
D913	8-719-109-93	DIODE RD6.2ES-B2	

< IC >

REF. NO.	PART NO.	DESCRIPTION	REMARK
IC201	8-752-863-97	IC CXP87248-077Q	(K872)
IC201	8-752-865-95	IC CXP87248-084Q	(K862)
IC251	8-759-335-76	IC uPC5023GR-089-E2	
△IC291	8-759-294-26	IC BA6209-V2	
IC351	8-759-097-80	IC HD49783FP	
IC401	8-759-343-74	IC MB90089PF-G-139-BND-ER	
IC402	8-759-164-09	IC LA7218M	
IC601	8-759-349-36	IC BA7652AF-E2	
IC611	8-759-009-06	IC MC14052BF	
IC612	8-759-924-46	IC BA4560F	
IC651	8-759-349-35	IC BA7623F-E2	
IC681	8-759-924-46	IC BA4560F	
IC851	8-759-268-02	IC BA7796FS-E2	

< JUMPER RESISTOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
JR001	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR004	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR005	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR006	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR007	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR008	1-216-296-00	METAL CHIP 0 5% 1/8W	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

MA-232

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR009	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR011	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR012	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR015	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR016	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR017	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR018	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR019	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR020	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR021	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR022	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR023	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR024	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR025	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR026	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR027	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR028	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR029	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR030	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR031	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR032	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR033	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR034	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR035	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR036	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR037	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR038	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR039	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR040	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR041	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR043	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR045	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR046	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR047	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR048	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR049	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR050	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR051	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR052	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR053	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR054	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR055	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR056	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR057	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR058	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR059	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR060	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR061	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR062	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR063	1-216-296-00	METAL CHIP 0 5% 1/8W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR065	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR066	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR067	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR068	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR070	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR071	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR406	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR407	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR631	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR632	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR726	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L202	1-410-470-11	INDUCTOR 10uH	
L401	1-410-482-31	INDUCTOR 100uH	
L402	1-410-515-11	INDUCTOR 33uH	
L403	1-408-413-00	INDUCTOR 22uH	
L404	1-410-482-31	INDUCTOR 100uH	
L600	1-410-470-11	INDUCTOR 10uH	
L611	1-410-482-31	INDUCTOR 100uH	
L621	1-410-482-31	INDUCTOR 100uH	
L651	1-410-509-11	INDUCTOR 10uH	
L701	1-414-183-41	INDUCTOR 10uH	
L702	1-414-189-31	INDUCTOR 100uH	
L703	1-414-183-41	INDUCTOR 10uH	
L704	1-414-183-41	INDUCTOR 10uH	
L705	1-410-501-11	INDUCTOR 2.2uH	
L706	1-410-501-11	INDUCTOR 2.2uH	
L710	1-410-501-11	INDUCTOR 2.2uH	
L712	1-410-501-11	INDUCTOR 2.2uH	
L851	1-410-482-31	INDUCTOR 100uH	
L881	1-410-687-11	INDUCTOR 1.2mH	
L891	1-410-687-11	INDUCTOR 1.2mH	
		< CABLE >	
P701	1-555-110-00	CABLE, PIN	
		< PHOTO INTERRUPTER >	
PH261	8-749-010-19	PHOTO INTERRUPTER GP3S113	
PH262	8-749-010-20	PHOTO INTERRUPTER GP3S114	
		< IC LINK >	
⚠PS271	1-532-727-91	LINK, IC 0.25A (ICP-N5)	
⚠PS887	1-532-727-91	LINK, IC 0.25A (ICP-N5)	
		< TRANSISTOR >	
Q236	8-729-421-22	TRANSISTOR UN2211	
Q237	8-729-421-22	TRANSISTOR UN2211	
Q238	8-729-421-22	TRANSISTOR UN2211	
Q239	8-729-421-22	TRANSISTOR UN2211	
Q243	8-729-010-25	TRANSISTOR MSD601-RT1	

The components identi
mark ⚠or dotted line
mark. ⚠ are critical fo
safety. Replace only wi
part number specified.

REF. NO.	PART NO.	DESCRIPTION				REMARK
Q244	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q261	8-729-025-92	PHOTO	TRANSISTOR PT380F			
Q262	8-729-025-92	PHOTO	TRANSISTOR PT380F			
Q263	8-729-281-53	TRANSISTOR	2SC1815-GR			
Q351	8-729-901-06	TRANSISTOR	DTA144EK			
Q353	8-729-421-19	TRANSISTOR	UN2213			
Q354	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q401	8-729-421-19	TRANSISTOR	UN2213			
Q402	8-729-901-06	TRANSISTOR	DTA144EK			
Q404	8-729-010-05	TRANSISTOR	MSB709-RT1			
Q405	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q406	8-729-010-05	TRANSISTOR	MSB709-RT1			
Q407	8-729-010-05	TRANSISTOR	MSB709-RT1			
Q631	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q641	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q671	8-729-010-05	TRANSISTOR	MSB709-RT1			
Q672	8-729-421-19	TRANSISTOR	UN2213			
Q702	8-729-421-19	TRANSISTOR	UN2213			
⚠Q703	8-729-193-36	TRANSISTOR	2SA733TP-Q			
Q707	8-729-106-68	TRANSISTOR	2SD1615A-GP			
Q709	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q745	8-729-010-05	TRANSISTOR	MSB709-RT1			
Q746	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q747	8-729-010-25	TRANSISTOR	MSD601-RT1			
Q748	8-729-010-25	TRANSISTOR	MSD601-RT1			
⚠Q881	8-729-012-31	TRANSISTOR	2SC4040-TL2-Q			
⚠Q882	8-729-102-73	TRANSISTOR	2SA812-TIM7			
Q889	8-729-010-25	TRANSISTOR	MSD601-RT1			
⚠Q891	8-729-012-31	TRANSISTOR	2SC4040-TL2-Q			
⚠Q892	8-729-102-73	TRANSISTOR	2SA812-TIM7			

< RESISTOR >

REF. NO.	PART NO.	DESCRIPTION				REMARK
R214	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R217	1-249-431-11	CARBON	15K	5%	1/4W	
R219	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R224	1-249-429-11	CARBON	10K	5%	1/4W	F
R225	1-249-437-11	CARBON	47K	5%	1/4W	
R226	1-249-436-11	CARBON	39K	5%	1/4W	
R227	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R231	1-249-417-11	CARBON	1K	5%	1/4W	F
R232	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R233	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R234	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R235	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R236	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R237	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R238	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R239	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R240	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R241	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R242	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R243	1-216-073-00	METAL CHIP	10K	5%	1/10W	

REF. NO.	PART NO.	DESCRIPTION				REMARK
R244	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R251	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R252	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R253	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R254	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R255	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R256	1-216-252-00	METAL GLAZE	180K	5%	1/8W	
R261	1-249-400-11	CARBON	39	5%	1/4W	F
R262	1-249-400-11	CARBON	39	5%	1/4W	F
R263	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R264	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R265	1-249-439-11	CARBON	68K	5%	1/4W	
R266	1-249-413-11	CARBON	470	5%	1/4W	F
R267	1-249-432-11	CARBON	18K	5%	1/4W	
R268	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R271	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R274	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R275	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R276	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R277	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R278	1-216-224-91	METAL GLAZE	12K	5%	1/8W	
R281	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R282	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R283	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R284	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R291	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R292	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R351	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R352	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R353	1-216-198-91	METAL GLAZE	1K	5%	1/8W	
R354	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R361	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R362	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R363	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R364	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R365	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R366	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R367	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R368	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R369	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R370	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R371	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R372	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R373	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R374	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R401	1-216-037-00	METAL CHIP	330	5%	1/10W	
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R403	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R404	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R405	1-216-295-00	METAL CHIP	0	5%	1/10W	
R406	1-216-295-00	METAL CHIP	0	5%	1/10W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION				REMARK
R407	1-249-414-11	CARBON	560	5%	1/4W	F
R408	1-216-101-00	METAL CHIP	150K	5%	1/10W	
R409	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R410	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R411	1-247-807-31	CARBON	100	5%	1/4W	
R412	1-216-296-00	METAL CHIP	0	5%	1/8W	
R413	1-216-296-00	METAL CHIP	0	5%	1/8W	
R414	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R415	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R416	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R417	1-216-182-00	METAL GLAZE	220	5%	1/8W	
R421	1-247-863-91	CARBON	22K	5%	1/4W	
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R425	1-216-295-00	METAL CHIP	0	5%	1/10W	
R603	1-249-401-11	CARBON	47	5%	1/4W	F
R604	1-216-022-00	METAL CHIP	75	5%	1/10W	
R605	1-249-401-11	CARBON	47	5%	1/4W	F
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R611	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R612	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R613	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R614	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R615	1-216-230-00	METAL GLAZE	22K	5%	1/8W	
R616	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R617	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R618	1-216-190-00	METAL GLAZE	470	5%	1/8W	
R619	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R621	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R622	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R623	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R624	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R625	1-247-863-91	CARBON	22K	5%	1/4W	
R626	1-216-234-00	METAL GLAZE	33K	5%	1/8W	
R627	1-249-435-11	CARBON	33K	5%	1/4W	
R628	1-216-041-00	METAL CHIP	470	5%	1/10W	
R629	1-249-414-11	CARBON	560	5%	1/4W	F
R631	1-249-417-11	CARBON	1K	5%	1/4W	F
R632	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R641	1-249-417-11	CARBON	1K	5%	1/4W	F
R642	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R643	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R655	1-216-021-00	METAL CHIP	68	5%	1/10W	
R657	1-216-029-00	METAL CHIP	150	5%	1/10W	
R658	1-216-031-00	METAL CHIP	180	5%	1/10W	
R671	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R672	1-216-196-00	METAL GLAZE	820	5%	1/8W	
R681	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R682	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R683	1-247-863-91	CARBON	22K	5%	1/4W	
R685	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R691	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R692	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R693	1-247-863-91	CARBON	22K	5%	1/4W	
R695	1-216-230-00	METAL CHIP	22K	5%	1/8W	
R701	1-249-413-11	CARBON	470	5%	1/4W	F
R702	1-249-413-11	CARBON	470	5%	1/4W	F
R703	1-216-198-91	METAL GLAZE	1K	5%	1/8W	
R704	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R706	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R708	1-216-021-00	METAL CHIP	68	5%	1/10W	
R709	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R710	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R719	1-249-417-11	CARBON	1K	5%	1/4W	F
R720	1-249-417-11	CARBON	1K	5%	1/4W	F
R721	1-249-411-11	CARBON	330	5%	1/4W	
R722	1-216-025-00	METAL CHIP	100	5%	1/10W	
R724	1-249-415-11	CARBON	680	5%	1/4W	F
R727	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R728	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R731	1-216-174-00	METAL CHIP	100	5%	1/8W	
R732	1-216-174-00	METAL CHIP	100	5%	1/8W	
R737	1-216-295-00	METAL CHIP	0	5%	1/10W	
R738	1-216-025-00	METAL CHIP	100	5%	1/10W	
R739	1-216-025-00	METAL CHIP	100	5%	1/10W	
R745	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R746	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R747	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R748	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R851	1-247-863-91	CARBON	22K	5%	1/4W	
R852	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R854	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R855	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R856	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R857	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R858	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R859	1-216-295-00	METAL CHIP	0	5%	1/10W	
R860	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R861	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R862	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R863	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R864	1-216-041-00	METAL CHIP	470	5%	1/10W	
R865	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R866	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R867	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R868	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R869	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R870	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R871	1-249-429-11	CARBON	10K	5%	1/4W	
R872	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R873	1-216-295-00	METAL CHIP	0	5%	1/10W	
R875	1-249-430-11	CARBON	12K	5%	1/4W	

REF. NO.	PART NO.	DESCRIPTION				REMARK
R876	1-216-001-00	METAL CHIP	10	5%	1/10W	
R877	1-249-417-11	CARBON	1K	5%	1/4W	F
R878	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R879	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R881	1-216-081-00	METAL CHIP	22K	5%	1/10W	
⚠R882	1-249-395-91	CARBON	15	5%	1/4W	F
R883	1-249-417-11	CARBON	1K	5%	1/4W	F
R884	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R887	1-216-295-00	METAL CHIP	0	5%	1/10W	
R891	1-216-083-00	METAL CHIP	27K	5%	1/10W	
⚠R892	1-249-394-91	CARBON	12	5%	1/4W	F
R893	1-249-417-11	CARBON	1K	5%	1/4W	F
R894	1-216-246-91	METAL GLAZE	100K	5%	1/8W	
R896	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R897	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R898	1-216-234-00	METAL GLAZE	33K	5%	1/8W	
R899	1-216-244-00	METAL GLAZE	82K	5%	1/8W	
R903	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W	
R904	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W	
R905	1-249-417-11	CARBON	1K	5%	1/4W	F
R906	1-249-417-11	CARBON	1K	5%	1/4W	F
		< RF MODULATOR >				
⚠RF701	1-467-958-11	MODULATOR, RF (RFU-2100)				
		< VARIABLE RESISTOR >				
RV887	1-223-241-11	RES, ADJ, CARBON 47K (BIAS)				
		< SWITCH >				
S251	1-570-953-11	SWITCH, PUSH (1 KEY) (REC PRF)				
		< TRANSFORMER >				
T881	1-423-413-11	TRANSFORMER, BIAS OSCILLATION				
T891	1-423-415-11	TRANSFORMER, BIAS OSCILLATION				
		< TUNER >				
⚠TU701	1-693-268-11	TUNER, IF (BTF-3WC422) (K872PS)				
⚠TU701	1-693-270-11	TUNER, IF (BTF-3WC421) (K872MN)				
⚠TU701	1-693-271-11	TUNER, IF (BTF-3WC423) (K862)				
		< VIBRATOR >				
X201	1-760-494-11	VIBRATOR, CRYSTAL (16 MHz)				
X401	1-577-289-11	VIBRATOR, CRYSTAL (17 MHz)				
X403	1-577-165-11	VIBLATOR, CERAMIC (500 kHz)				

*	A-6782-628-A	MA-242 BOARD, COMPLETE	(KH3)			
		********************				
		(Ref. No 2,000 series)				
*	3-960-273-01	SPACER, TOP END				
*	3-960-274-01	SPACER, LED				

REF. NO.	PART NO.	DESCRIPTION				REMARK
		< CAPACITOR >				
C210	1-124-584-00	ELECT	100uF	20%	10V	
C211	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C212	1-163-229-11	CERAMIC CHIP	12PF	5%	50V	
C213	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C214	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C215	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C220	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C241	1-124-464-11	ELECT	0.22uF	20%	50V	
C242	1-124-464-11	ELECT	0.22uF	20%	50V	
C251	1-126-096-11	ELECT	10uF	20%	35V	
C252	1-126-096-11	ELECT	10uF	20%	35V	
C253	1-163-059-91	CERAMIC CHIP	0.01uF	10%	50V	
C254	1-124-589-11	ELECT	47uF	20%	16V	
C255	1-130-489-00	MYLAR	0.033uF	5%	50V	
C256	1-137-441-11	FILM	0.027uF	5%	50V	
C261	1-124-635-00	ELECT	220uF	20%	6.3V	
C262	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C263	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C264	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V	
C265	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C266	1-163-009-00	CERAMIC CHIP	0.001uF	10%	50V	
C267	1-163-009-00	CERAMIC CHIP	0.001uF	10%	50V	
C271	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C272	1-124-589-11	ELECT	47uF	20%	16V	
C273	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C275	1-163-077-91	CERAMIC CHIP	0.1uF		50V	
C291	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C292	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C293	1-163-077-91	CERAMIC CHIP	0.1uF		50V	
C294	1-124-455-00	ELECT	100uF	20%	16V	
C295	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C296	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C297	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C351	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C352	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V	
C353	1-124-464-11	ELECT	0.22uF	20%	50V	
C361	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C362	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C401	1-124-584-00	ELECT	100uF	20%	10V	
C402	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C403	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C404	1-163-102-00	CERAMIC CHIP	24PF	5%	50V	
C409	1-124-584-00	ELECT	100uF	20%	10V	
C410	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C415	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C416	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C417	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C418	1-126-160-11	ELECT	1uF	20%	50V	
C420	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C421	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

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REF. NO.	PART NO.	DESCRIPTION	REMARK
C422	1-137-372-11	FILM 0.022uF 5% 50V	
C423	1-124-465-00	ELECT 0.47uF 20% 50V	
C424	1-163-102-00	CERAMIC CHIP 24PF 5% 50V	
C427	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C600	1-126-967-11	ELECT 47uF 20% 10V	
C601	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C602	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C603	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C605	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C611	1-126-967-11	ELECT 47uF 20% 10V	
C612	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C621	1-126-967-11	ELECT 47uF 20% 10V	
C622	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C651	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C652	1-126-967-11	ELECT 47uF 20% 10V	
C655	1-126-935-11	ELECT 470uF 20% 6.3V	
C656	1-126-935-11	ELECT 470uF 20% 6.3V	
C657	1-126-967-11	ELECT 47uF 20% 10V	
C661	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C662	1-163-205-00	CERAMIC CHIP 0.001uF 5% 50V	
C671	1-126-967-11	ELECT 47uF 20% 10V	
C681	1-124-257-00	ELECT 2.2uF 20% 50V	
C691	1-124-257-00	ELECT 2.2uF 20% 50V	
C712	1-163-031-11	ELECT 0.01uF 50V	
C754	1-126-933-11	ELECT 100uF 20% 16V	
C755	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C756	1-126-933-11	ELECT 100uF 20% 16V	
C842	1-124-589-11	ELECT 47uF 20% 16V	
C843	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C851	1-161-772-11	CERAMIC 0.1uF 20% 16V	
C852	1-161-772-11	CERAMIC 0.1uF 20% 16V	
C853	1-164-159-11	CERAMIC 0.1uF 50V	
C854	1-124-903-11	ELECT 1uF 20% 50V	
C855	1-164-159-11	CERAMIC 0.1uF 50V	
C856	1-137-370-11	FILM 0.01uF 5% 50V	
C857	1-124-927-11	ELECT 4.7uF 20% 100V	
C858	1-126-111-11	ELECT 3.3uF 20% 50V	
C859	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C860	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C861	1-124-257-00	ELECT 2.2uF 20% 50V	
C862	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C863	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C864	1-128-551-11	ELECT 22uF 20% 25V	
C865	1-128-551-11	ELECT 22uF 20% 25V	
C866	1-124-252-00	ELECT 0.33uF 20% 50V	
C867	1-126-964-11	ELECT 10uF 20% 50V	
C881	1-137-612-11	FILM 0.0068uF 5% 100V	
C882	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C883	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C884	1-126-933-11	ELECT 100uF 20% 16V	
C889	1-137-453-11	FILM 560PF 5% 100V	
C891	1-104-697-11	FILM 0.047uF 5% 100V	

REF. NO.	PART NO.	DESCRIPTION	REMARK
C892	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C893	1-163-011-11	CERAMIC CHIP 0.0015uF 10% 50V	
C894	1-126-933-11	ELECT 100uF 20% 16V	
C902	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C903	1-124-584-00	ELECT 100uF 20% 10V	
C904	1-163-038-00	CERAMIC CHIP 0.1uF 25V	

< JACK >

REF. NO.	PART NO.	DESCRIPTION	REMARK
CJ602	1-764-222-11	JACK, PIN 6P (LINE 1 IN/OUT)	

< CONNECTOR >

REF. NO.	PART NO.	DESCRIPTION	REMARK
* CN271	1-766-538-11	CONNECTOR, BOARD TO BOARD 8P	
* CN275	1-766-717-11	CONNECTOR, BOARD TO BOARD 5P	
* CN281	1-766-537-11	CONNECTOR (HMD) 5P	
* CN291	1-766-716-11	CONNECTOR, BOARD TO BOARD 3P	
CN601	1-506-475-11	PIN, CONNECTOR 10P	
* CN702	1-573-128-11	PIN, CONNECTOR 5P	
CN881	1-506-469-11	PIN, CONNECTOR 4P	
* CN882	1-560-891-00	PIN, CONNECTOR 3P	
CN891	1-506-468-11	PIN, CONNECTOR 3P	
* CN901	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	
* CN902	1-573-843-11	CONNECTOR, BOARD TO BOARD 11P	
CN904	1-766-992-11	CONNECTOR, FFC/FPC 19P	
CN905	1-766-992-11	CONNECTOR, FFC/FPC 19P	
CN906	1-573-847-11	CONNECTOR, BOARD TO BOARD 15P	
CN907	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P	
CN908	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P	
CN910	1-770-017-11	CONNECTOR, BOARD TO BOARD 19P	
CN911	1-766-996-41	CONNECTOR, FFC/FPC 23P	

< TRIMMER >

REF. NO.	PART NO.	DESCRIPTION	REMARK
CT401	1-141-334-11	CAP, VAR, TRIMMER	

< DIODE >

REF. NO.	PART NO.	DESCRIPTION	REMARK
D202	8-719-200-82	DIODE 11ES2	
D206	8-719-801-78	DIODE 1SS184	
D243	8-719-104-34	DIODE 1S2836	
D251	8-719-801-78	DIODE 1SS184	
D261	8-719-048-26	DIODE GL528V1 (T/S)	
D265	8-719-109-93	DIODE RD6.2ES-B2	
D267	8-719-109-93	DIODE RD6.2ES-B2	
D291	8-719-110-14	DIODE RD9.1ES-B3	
D403	8-719-801-78	DIODE 1SS184	
D601	8-719-801-78	DIODE 1SS184	
D602	8-719-801-78	DIODE 1SS184	
D661	8-719-109-74	DIODE RD4.3ES-B1	
D662	8-719-109-74	DIODE RD4.3ES-B1	
D663	8-719-109-74	DIODE RD4.3ES-B1	
D664	8-719-109-74	DIODE RD4.3ES-B1	
D671	8-719-109-92	DIODE RD6.2ES-B1	
D681	8-719-800-76	DIODE 1SS226	

REF. NO.	PART NO.	DESCRIPTION	REMARK
D691	8-719-800-76	DIODE 1SS226	
D704	8-719-110-14	DIODE RD9.1ES-B3	
D705	8-719-801-78	DIODE 1SS184	
D841	8-719-200-82	DIODE 11ES2	
D851	8-719-801-78	DIODE 1SS184	
D854	8-719-801-78	DIODE 1SS184	
D902	8-719-200-82	DIODE 11ES2	
D904	8-719-991-75	DIODE RB425D	
D910	8-719-109-93	DIODE RD6.2ES-B2	
D911	8-719-109-93	DIODE RD6.2ES-B2	
		< IC >	
IC201	8-752-863-99	IC CXP87248-076Q	
IC220	8-759-510-43	IC PST572C	
IC251	8-759-335-76	IC uPC5023GR-089-E2	
⚠IC291	8-759-294-26	IC BA6209-V2	
IC351	8-759-097-80	IC HD49783FP	
IC401	8-759-343-75	IC LC7461M-9100-TLM	
IC601	8-759-349-36	IC BA7652AF-E2	
IC611	8-759-009-06	IC MC14052BF	
IC612	8-759-924-46	IC BA4560F	
IC651	8-759-349-35	IC BA7623F-E2	
IC681	8-759-924-46	IC BA4560F	
IC851	8-759-268-02	IC BA7796FS-E2	
		< JUMPER RESISTOR >	
JR001	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR002	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR003	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR004	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR005	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR006	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR007	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR010	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR011	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR015	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR016	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR018	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR019	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR021	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR022	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR023	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR024	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR025	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR026	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR027	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR028	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR030	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR031	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR032	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR033	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR034	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR035	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR036	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR037	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR038	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR039	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR040	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR041	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR042	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR043	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR044	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR045	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR046	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR047	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR048	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR049	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR050	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR051	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR052	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR053	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR054	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR055	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR056	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR057	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR058	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR059	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR060	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR062	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR063	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR064	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR065	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR066	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR067	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR068	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR069	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR070	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR071	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR072	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR073	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR074	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR075	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR076	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR077	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR078	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR079	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR080	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR081	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR082	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR101	1-216-295-00	METAL CHIP 0 5% 1/10W	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

MA-242

REF.NO.	PART NO.	DESCRIPTION	REMARK
JR102	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR103	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR104	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR105	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR402	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR406	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR501	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR502	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR503	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR504	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR505	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR506	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR507	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR508	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR631	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR632	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR932	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR933	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR934	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR995	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR996	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR999	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

REF.NO.	PART NO.	DESCRIPTION	REMARK
L202	1-410-470-11	INDUCTOR 10uH	
L401	1-410-482-31	INDUCTOR 100uH	
L402	1-410-482-31	INDUCTOR 100uH	
L403	1-410-513-11	INDUCTOR 22uH	
L404	1-410-506-11	INDUCTOR 5.6uH	
L600	1-410-470-11	INDUCTOR 10uH	
L611	1-410-482-31	INDUCTOR 100uH	
L621	1-410-482-31	INDUCTOR 100uH	
L651	1-410-509-11	INDUCTOR 10uH	
L842	1-410-501-11	INDUCTOR 2.2uH	
L843	1-410-501-11	INDUCTOR 2.2uH	
L851	1-410-482-31	INDUCTOR 100uH	
L881	1-410-687-11	INDUCTOR 1.2mH	
L891	1-410-687-11	INDUCTOR 1.2mH	

< PHOTO INTERRUPTER >

REF.NO.	PART NO.	DESCRIPTION	REMARK
PH261	8-749-010-19	PHOTO INTERRUPTER GP3S113	
PH262	8-749-010-20	PHOTO INTERRUPTER GP3S114	

< IC LINK >

REF.NO.	PART NO.	DESCRIPTION	REMARK
⚠PS271	1-532-727-91	LINK, IC 0.25A (ICP-N5)	
⚠PS887	1-532-727-91	LINK, IC 0.25A (ICP-N5)	

< TRANSISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
Q236	8-729-421-22	TRANSISTOR UN2211	
Q237	8-729-421-22	TRANSISTOR UN2211	
Q238	8-729-421-22	TRANSISTOR UN2211	
Q239	8-729-421-22	TRANSISTOR UN2211	
Q243	8-729-010-25	TRANSISTOR MSD601-RT1	
Q244	8-729-010-25	TRANSISTOR MSD601-RT1	
Q245	8-729-424-08	TRANSISTOR UN2111	
Q247	8-729-424-08	TRANSISTOR UN2111	
Q248	8-729-424-08	TRANSISTOR UN2111	
Q249	8-729-421-22	TRANSISTOR UN2211	
Q261	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q262	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q263	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q351	8-729-901-06	TRANSISTOR DTA144EK	
Q353	8-729-421-19	TRANSISTOR UN2213	
Q354	8-729-010-25	TRANSISTOR MSD601-RT1	
Q355	8-729-421-19	TRANSISTOR UN2213	
Q404	8-729-010-05	TRANSISTOR MSB709-RT1	
Q405	8-729-010-05	TRANSISTOR MSB709-RT1	
Q431	8-729-010-05	TRANSISTOR MSB709-RT1	
Q631	8-729-010-25	TRANSISTOR MSD601-RT1	
Q641	8-729-010-25	TRANSISTOR MSD601-RT1	
Q671	8-729-010-05	TRANSISTOR MSB709-RT1	
Q672	8-729-421-19	TRANSISTOR UN2213	
Q702	8-729-421-22	TRANSISTOR UN2211	
Q703	8-729-010-05	TRANSISTOR MSB709-RT1	
Q711	8-729-106-68	TRANSISTOR 2SD1615A-GP	
⚠Q881	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
⚠Q882	8-729-102-73	TRANSISTOR 2SA812-TIM7	
Q889	8-729-010-25	TRANSISTOR MSD601-RT1	
⚠Q891	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q	
⚠Q892	8-729-102-73	TRANSISTOR 2SA812-TIM7	

< RESISTOR >

REF.NO.	PART NO.	DESCRIPTION	REMARK
R202	1-216-295-00	METAL CHIP 0 5% 1/10W	
R214	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R217	1-249-431-11	CARBON 15K 5% 1/4W	
R219	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R220	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R221	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R224	1-249-429-11	CARBON 10K 5% 1/4W	
R225	1-249-437-11	CARBON 47K 5% 1/4W	
R226	1-249-436-11	CARBON 39K 5% 1/4W	
R227	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R228	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R231	1-249-417-11	CARBON 1K 5% 1/4W	F
R232	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R233	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R234	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R235	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R236	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R237	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R238	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R239	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R240	1-216-073-00	METAL CHIP 10K 5% 1/10W	

The components identifi
mark ⚠ or dotted line w
mark. ⚠ are critical for
safety. Replace only wit
part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R241	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R242	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R243	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R244	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R245	1-216-295-00	METAL CHIP	0	5%	1/10W	
R246	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R251	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R252	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R253	1-216-689-11	METAL CHIP	39K	0.5%	1/10W	
R254	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R255	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R256	1-216-252-00	METAL GLAZE	180K	5%	1/8W	
R261	1-249-400-11	CARBON	39	5%	1/4W	F
R262	1-249-400-11	CARBON	39	5%	1/4W	F
R263	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R264	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R265	1-249-439-11	CARBON	68K	5%	1/4W	
R266	1-249-413-11	CARBON	470	5%	1/4W	F
R267	1-249-432-11	CARBON	18K	5%	1/4W	
R268	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R271	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R274	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R275	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R276	1-216-056-00	METAL GLAZE	2K	5%	1/10W	
R277	1-216-068-00	METAL CHIP	6.2K	5%	1/10W	
R278	1-216-224-91	METAL GLAZE	12K	5%	1/8W	
R281	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R282	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R283	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R284	1-216-238-91	METAL GLAZE	47K	5%	1/8W	
R291	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R292	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R351	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R352	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R353	1-216-198-91	METAL GLAZE	1K	5%	1/8W	
R354	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R355	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R356	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R361	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R362	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R363	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R364	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R365	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R366	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R367	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R368	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R369	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R370	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R371	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R372	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R373	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R374	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R413	1-216-295-00	METAL CHIP	0	5%	1/10W	
R414	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R415	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R416	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R417	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R418	1-216-037-00	METAL CHIP	330	5%	1/10W	
R419	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R420	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R421	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R422	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R423	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R425	1-216-295-00	METAL CHIP	0	5%	1/10W	
R431	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R435	1-216-025-00	METAL CHIP	100	5%	1/10W	
R603	1-249-401-11	CARBON	47	5%	1/4W	F
R604	1-216-022-00	METAL CHIP	75	5%	1/10W	
R605	1-249-401-11	CARBON	47	5%	1/4W	F
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R612	1-216-295-00	METAL CHIP	0	5%	1/10W	
R613	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R614	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R615	1-216-230-00	METAL GLAZE	22K	5%	1/8W	
R616	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R617	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R618	1-216-190-00	METAL GLAZE	470	5%	1/8W	
R619	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R620	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R622	1-216-295-00	METAL CHIP	0	5%	1/10W	
R623	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R624	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R625	1-247-863-91	CARBON	22K	5%	1/4W	
R626	1-216-234-00	METAL GLAZE	33K	5%	1/8W	
R627	1-249-435-11	CARBON	33K	5%	1/4W	
R628	1-216-041-00	METAL CHIP	470	5%	1/10W	
R629	1-249-414-11	CARBON	560	5%	1/4W	F
R630	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R631	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R632	1-249-429-11	CARBON	10K	5%	1/4W	
R633	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R641	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R642	1-249-429-11	CARBON	10K	5%	1/4W	
R643	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R655	1-216-021-00	METAL CHIP	68	5%	1/10W	
R656	1-216-021-00	METAL CHIP	68	5%	1/10W	
R657	1-216-029-00	METAL CHIP	150	5%	1/10W	
R658	1-216-031-00	METAL CHIP	180	5%	1/10W	
R671	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R672	1-216-196-00	METAL GLAZE	820	5%	1/8W	
R681	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R682	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R683	1-247-863-91	CARBON	22K	5%	1/4W	

REF. NO.	PART NO.	DESCRIPTION				REMARK
R685	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R691	1-216-121-00	METAL CHIP	1M	5%	1/10W	
R692	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R693	1-216-230-00	METAL GLAZE	22K	5%	1/8W	
R695	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R700	1-216-295-00	METAL CHIP	0	5%	1/10W	
R710	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R771	1-247-807-31	CARBON	100	5%	1/4W	
R841	1-247-807-31	CARBON	100	5%	1/4W	
R851	1-247-863-91	CARBON	22K	5%	1/4W	
R852	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R854	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R856	1-216-295-00	METAL CHIP	0	5%	1/10W	
R857	1-216-085-00	METAL CHIP	33K	5%	1/10W	
R858	1-216-129-00	METAL CHIP	2.2M	5%	1/10W	
R859	1-216-295-00	METAL CHIP	0	5%	1/10W	
R860	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R861	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R862	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R863	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R864	1-216-041-00	METAL CHIP	470	5%	1/10W	
R865	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R866	1-216-099-00	METAL CHIP	120K	5%	1/10W	
R867	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R868	1-216-095-00	METAL CHIP	82K	5%	1/10W	
R869	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R870	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R871	1-249-429-11	CARBON	10K	5%	1/4W	
R872	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R873	1-216-296-00	METAL CHIP	0	5%	1/8W	
R875	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R876	1-216-001-00	METAL CHIP	10	5%	1/10W	
R877	1-249-417-11	CARBON	1K	5%	1/4W	F
R878	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R879	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R881	1-216-081-00	METAL CHIP	22K	5%	1/10W	
⚠R882	1-249-395-91	CARBON	15	5%	1/4W	F
R883	1-249-417-11	CARBON	1K	5%	1/4W	F
R884	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R887	1-216-295-00	METAL CHIP	0	5%	1/10W	
R891	1-216-083-00	METAL CHIP	27K	5%	1/10W	
⚠R892	1-249-394-91	CARBON	12	5%	1/4W	F
R893	1-249-417-11	CARBON	1K	5%	1/4W	F
R894	1-216-246-91	METAL GLAZE	100K	5%	1/8W	
R896	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R897	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R903	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W	
R904	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W	
R905	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R906	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R910	1-260-087-11	CARBON	100	5%	1/2W	
R911	1-260-105-11	CARBON	3.3K	5%	1/2W	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< RF MODULATOR >	
⚠RF841	1-473-226-11	MODULATOR, RF (RFU-2043)	
		< VARIABLE RESISTOR >	
RV887	1-223-241-11	RES, ADJ, CARBON 47K (BIAS)	
		< SWITCH >	
S251	1-570-953-11	SWITCH, PUSH (1 KEY) (REC PRF)	
		< TRANSFORMER >	
T881	1-423-413-11	TRANSFORMER, BIAS OSCILLATION	
T891	1-423-415-11	TRANSFORMER, BIAS OSCILLATION	
		< VIBRATOR >	
X201	1-760-494-11	VIBRATOR, CRYSTAL (16MHz)	
X401	1-577-289-11	VIBRATOR, CRYSTAL (17MHz)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	A-6782-612-A	MF-267 BOARD, COMPLETE(K862/K872) ********************* (Ref. No 6,000 series)	
		< CAPACITOR >	
C401	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
		< SWITCH >	
CN401	1-762-172-21	SWITCH, ROTARY (DMS)	
		< CONNECTOR >	
* CN402	1-764-212-11	CONNECTOR, BOARD TO BOARD 13P	
* CN403	1-695-822-11	CONNECTOR, BOARD TO BOARD 8P	
CN404	1-569-336-11	CONNECTOR, BOARD TO BOARD 7P	
		< DIODE >	
D403	8-719-045-62	DIODE SLR-342VC-A-47 (●REC)	
D404	8-719-812-32	LED TLY123 (REC ILM)	
D405	8-719-812-32	LED TLY123 (REC ILM)	
D406	8-719-045-62	DIODE SLR-342VC-A-47 (TIMER)	
D408	8-719-812-32	LED TLY123 (TIMER ILM)	
D409	8-719-812-32	LED TLY123 (TIMER ILM)	
D410	8-719-051-17	DIODE SLR-342DCT31 (▮▮PAUSE)	
D415	8-719-200-82	DIODE 11ES2	
D416	8-719-812-32	LED TLY123 (REC ILM)	
D417	8-719-812-32	LED TLY123 (REC ILM)	
D418	8-719-812-32	LED TLY123 (TIMER ILM)	
D419	8-719-812-32	LED TLY123 (TIMER ILM)	
		< IC >	
IC401	8-752-815-96	IC CXP2001M	

The components iden
mark ⚠or dotted line
mark. ⚠ are critical f
safety. Replace only
part number specified

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< JUMPER RESISTOR >	
JR401	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L401	1-408-405-00	INDUCTOR 4.7uH	
L402	1-408-405-00	INDUCTOR 4.7uH	
		< RESISTOR >	
R401	1-216-033-00	METAL CHIP 220 5% 1/10W	
R402	1-216-033-00	METAL CHIP 220 5% 1/10W	
R403	1-216-033-00	METAL CHIP 220 5% 1/10W	
R404	1-216-166-00	METAL GLAZE 47 5% 1/8W	
R405	1-216-017-00	METAL CHIP 47 5% 1/10W	
R406	1-216-033-00	METAL CHIP 220 5% 1/10W	
R408	1-216-017-00	METAL CHIP 47 5% 1/10W	
R409	1-216-017-00	METAL CHIP 47 5% 1/10W	
R410	1-216-033-00	METAL CHIP 220 5% 1/10W	
R415	1-216-295-00	METAL CHIP 0 5% 1/10W	
R416	1-216-295-00	METAL CHIP 0 5% 1/10W	
R417	1-216-295-00	METAL CHIP 0 5% 1/10W	
R418	1-216-295-00	METAL CHIP 0 5% 1/10W	
R419	1-216-033-00	METAL CHIP 220 5% 1/10W	
R420	1-216-033-00	METAL CHIP 220 5% 1/10W	
R422	1-216-033-00	METAL CHIP 220 5% 1/10W	
R423	1-216-033-00	METAL CHIP 220 5% 1/10W	
R424	1-216-033-00	METAL CHIP 220 5% 1/10W	
R425	1-216-033-00	METAL CHIP 220 5% 1/10W	
R426	1-216-033-00	METAL CHIP 220 5% 1/10W	
R427	1-216-033-00	METAL CHIP 220 5% 1/10W	
R428	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R429	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R430	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
		< SWITCH >	
S402	1-571-977-11	SWITCH, TACTIL (❚❚PAUSE)	
S403	1-571-977-11	SWITCH, TACTIL (●REC)	

* A-6782-625-A MF-268 BOARD, COMPLETE (KH3)
****
(Ref. No 7,000 series)

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< CONNECTOR >	
CN401	1-770-017-11	CONNECTOR, BOARD TO BOARD 19P	
* CN403	1-695-820-11	CONNECTOR, BOARD TO BOARD 12P	
		< SWITCH >	
CN402	1-692-840-11	SWITCH, ROTARY (DMS)	
		< DIODE >	
D401	8-719-045-62	DIODE SLR-342VC-A-47 (A DUB)	
D402	8-719-911-19	DIODE 1SS119-25	
D403	8-719-911-19	DIODE 1SS119-25	
D404	8-719-911-19	DIODE 1SS119-25	
D405	8-719-045-62	DIODE SLR-342VC-A-47 (REC)	
D406	8-719-911-19	DIODE 1SS119-25	
D407	8-719-911-19	DIODE 1SS119-25	
D408	8-719-911-19	DIODE 1SS119-25	
D409	8-719-911-19	DIODE 1SS119-25	
D410	8-719-911-19	DIODE 1SS119-25	
D411	8-719-911-19	DIODE 1SS119-25	
D412	8-719-911-19	DIODE 1SS119-25	
D413	8-719-911-19	DIODE 1SS119-25	
		< JUMPER RESISTOR >	
JR401	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR403	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR404	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR405	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR407	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR408	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR409	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR410	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR412	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR413	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR414	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR415	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR416	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR417	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L401	1-408-405-00	INDUCTOR 4.7uH	
L402	1-408-405-00	INDUCTOR 4.7uH	
L403	1-408-405-00	INDUCTOR 4.7uH	
		< TRANSISTOR >	
Q402	8-729-421-19	TRANSISTOR UN2213	
		< RESISTOR >	
R401	1-216-035-00	METAL CHIP 270 5% 1/10W	
R402	1-216-035-00	METAL CHIP 270 5% 1/10W	
		< SWITCH >	
S401	1-571-977-11	SWITCH, TACTIL (● REC)	

* A-6781-609-A MJ-70 BOARD, COMPLETE (K862/K872)
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(Ref. No 7,000 series)

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< CAPACITOR >	
C901	1-163-025-11	CERAMIC CHIP 0.001uF 50V	

REF.NO.	PART NO.	DESCRIPTION	REMARK
C902	1-163-025-11	CERAMIC CHIP 0.001uF 50V	
C904	1-126-163-11	ELECT 4.7uF 20% 50V	
C905	1-126-163-11	ELECT 4.7uF 20% 50V	
C906	1-126-096-11	ELECT 10uF 20% 35V	
C907	1-126-096-11	ELECT 10uF 20% 35V	
C908	1-126-096-11	ELECT 10uF 20% 35V	
C909	1-126-096-11	ELECT 10uF 20% 35V	
C910	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C911	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
		< CONNECTOR >	
* CN901	1-573-839-11	CONNECTOR, BOARD TO BOARD 7P	
		< DIODE >	
D901	8-719-017-09	DIODE 02DZ6.2-TPH3	
D902	8-719-017-09	DIODE 02DZ6.2-TPH3	
		< IC >	
IC901	8-759-909-71	IC BA4558F	
		< JACK >	
J901	1-750-781-11	JACK, LARGE TYPE (MIC IN1)	
J902	1-750-781-11	JACK, LARGE TYPE (MIC IN2)	
J903	1-507-678-00	JACK (CONTROL)	
		< JUMPER RESISTOR >	
JR952	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR953	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR954	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR957	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< RESISTOR >	
R901	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R902	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R903	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R904	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R905	1-216-041-00	METAL CHIP 470 5% 1/10W	
R906	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R907	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R908	1-216-041-00	METAL CHIP 470 5% 1/10W	
R909	1-216-103-91	METAL GLAZE 180K 5% 1/10W	
R910	1-216-103-91	METAL GLAZE 180K 5% 1/10W	
R911	1-216-202-00	METAL GLAZE 1.5K 5% 1/8W	
R912	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	

* A-6782-631-A MJ-72 BOARD, COMPLETE (KH3)
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(Ref. No 7,000 series)

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< CAPACITOR >	
C701	1-163-025-11	CERAMIC CHIP 0.001uF 50V	
C702	1-163-025-11	CERAMIC CHIP 0.001uF 50V	
C703	1-163-033-91	CERAMIC CHIP 0.022uF 50V	
C704	1-126-163-11	ELECT 4.7uF 20% 50V	
C705	1-126-163-11	ELECT 4.7uF 20% 50V	
C707	1-126-096-11	ELECT 10uF 20% 35V	
C709	1-126-096-11	ELECT 10uF 20% 35V	
C710	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C711	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C713	1-162-306-11	CERAMIC 0.01uF 20% 16V	
C716	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
		< CONNECTOR >	
* CN701	1-695-822-11	CONNECTOR, BOARD TO BOARD 8P	
		< DIODE >	
D701	8-719-017-09	DIODE 02DZ6.2-TPH3	
D702	8-719-017-09	DIODE 02DZ6.2-TPH3	
D705	8-719-017-09	DIODE 02DZ6.2-TPH3	
		< IC >	
IC701	8-759-909-71	IC BA4558F	
		< JACK >	
J701	1-750-781-11	JACK, LARGE TYPE (MIC IN1)	
J702	1-750-781-11	JACK, LARGE TYPE (MIC IN2)	
J703	1-507-678-00	JACK (CONTROL)	
		< JUMPER RESISTOR >	
JR703	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR705	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR706	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR708	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L701	1-410-513-11	INDUCTOR 22uH	
		< RESISTOR >	
R701	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R702	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R703	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R704	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R705	1-216-041-00	METAL CHIP 470 5% 1/10W	
R706	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R707	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R708	1-216-041-00	METAL CHIP 470 5% 1/10W	
R709	1-216-103-91	METAL GLAZE 180K 5% 1/10W	
R710	1-216-103-91	METAL GLAZE 180K 5% 1/10W	
R711	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R712	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
*	A-6782-615-A	PS-340 BOARD, COMPLETE(K862/K872)	
*	A-6782-627-A	PS-341 BOARD, COMPLETE(KH3)	
		*********************	
		(Ref. No 8,000 series)	
*	3-951-893-01	HEAT SINK	
	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
		< CAPACITOR >	
⚠C101	1-104-705-51	FILM 0.1uF 20% 250V	
⚠C102	1-104-705-51	FILM 0.1uF 20% 250V	
⚠C103	1-107-414-11	ELECT 220uF 20% 400V	
⚠C104	1-104-972-21	CERAMIC 0.001uF 10% 400V	
⚠C105	1-104-972-21	CERAMIC 0.001uF 10% 400V	
⚠C106	1-104-972-21	CERAMIC 0.001uF 10% 400V	
⚠C107	1-104-972-21	CERAMIC 0.001uF 10% 400V	
⚠C108	1-104-972-21	CERAMIC 0.001uF 10% 400V	
C121	1-126-935-11	ELECT 470uF 20% 16V	
C122	1-126-926-11	ELECT 1000uF 20% 10V	
C123	1-126-935-11	ELECT 470uF 20% 16V	
C125	1-128-551-11	ELECT 22uF 20% 25V	
C131	1-126-934-11	ELECT 220uF 20% 16V	
C132	1-128-551-11	ELECT 22uF 20% 25V	
C133	1-126-967-11	ELECT 47uF 20% 16V	
C142	1-126-933-11	ELECT 100uF 20% 16V	
C161	1-126-967-11	ELECT 47uF 20% 16V	
C162	1-126-924-11	ELECT 330uF 20% 6.3V	
C171	1-126-924-11	ELECT 330uF 20% 10V	
C181	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C182	1-126-967-11	ELECT 47uF 20% 16V	
C183	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C184	1-126-967-11	ELECT 47uF 20% 16V	
C185	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C186	1-126-967-11	ELECT 47uF 20% 50V	
C187	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C188	1-126-967-11	ELECT 47uF 20% 50V	
C189	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C190	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C195	1-164-159-11	CERAMIC 0.1uF 50V	
C196	1-126-967-11	ELECT 47uF 20% 16V	
		< AC INLET >	
⚠CJ101	1-251-134-11	INLET, AC (NONPOLAR) 250V/2.5A	(AC IN~)
		< CONNECTOR >	
CN101	1-770-018-11	CONNECTOR, BOARD TO BOARD 19P	
* CN102	1-695-823-11	CONNECTOR, BOARD TO BOARD 8P	(K862/K872)
CN102	1-695-821-11	CONNECTOR, BOARD TO BOARD 12P(KH3)	
* CN103	1-573-128-11	PIN, CONNECTOR 5P	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< COMPOSITION CIRCUIT BLOCK >	
⚠CP101	1-468-035-11	POWER BLOCK (HS-628SF)	
⚠CP102	1-473-301-11	CONVERTER UNIT, DC/DC	
		< DIODE >	
⚠D101	8-719-510-06	DIODE S1WB60	
⚠D131	8-719-200-82	DIODE 11ES2	
⚠D161	8-719-911-19	DIODE 1SS119-25	
⚠D162	8-719-109-85	DIODE RD5.1ESB2	
		< FUSE >	
⚠F101	1-576-228-11	FUSE (H.B.C.) 250V/2A	
		< FUSE HOLDER >	
FH101	1-533-293-11	FUSE HOLDER	
FH102	1-533-293-11	FUSE HOLDER	
		< IC >	
⚠IC141	8-759-189-48	IC PQ12RE11	
		< JUMPER RESISTOR >	
JR111	1-216-295-00	METAL CHIP 0	5% 1/10W (K862/K872)
JR141	1-216-295-00	METAL CHIP 0	5% 1/10W
JR142	1-216-295-00	METAL CHIP 0	5% 1/10W
		< COIL >	
⚠L121	1-403-588-21	CIL, CHOKE 22uH	
⚠L122	1-403-588-21	CIL, CHOKE 22uH	
L123	1-403-588-21	CIL, CHOKE 22uH	
L181	1-414-183-41	INDUCTOR 10uH	
L182	1-414-142-11	INDUCTOR 1uH	
L183	1-414-142-11	INDUCTOR 1uH	
		< LINE FILTER >	
⚠LF101	1-424-117-11	FILTER, LINE 18mH/0.5A	
⚠LF102	1-424-117-11	FILTER, LINE 18mH/0.5A	
		< IC LINK >	
⚠PS121	1-532-637-00	LINK, IC 1.0A ICP-N25	
⚠PS122	1-532-637-00	LINK, IC 1.0A ICP-N25	
⚠PS123	1-532-675-21	LINK, IC 1.5A ICP-N38	
⚠PS181	1-532-605-00	LINK, IC 0.4A ICP-N10	
		< TRANSISTOR >	
⚠Q131	8-729-140-98	TRANSISTOR 2SB733-34	
Q132	8-729-421-22	TRANSISTOR UN2211	
⚠Q161	8-729-140-98	TRANSISTOR 2SD773-34	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

< RESISTOR >

REF. NO.	PART NO.	DESCRIPTION				REMARK
⚠R101	1-214-947-00	METAL	2.7M	1%	1/2W	
R112	1-216-230-00	METAL GLAZE	22K	5%	1/8W (K862/K872)	
R125	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R131	1-249-417-11	CARBON	1K	5%	1/4W	F
R132	1-216-430-11	METAL OXIDE	390	5%	1W	F
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R161	1-249-412-11	CARBON	390	5%	1/4W	F
R182	1-260-074-11	CARBON	6.8	5%	1/2W (KH3)	
R195	1-260-087-81	CARBON	100	5%	1/2W (K862/K872)	

< SWITCH >

REF. NO.	PART NO.	DESCRIPTION
S101	1-762-207-11	SWITCH, SLIDE (NTSC PB)

* A-6782-614-A RV-42 BOARD, COMPLETE (K862/K872)
* A-6782-626-A RV-43 BOARD, COMPLETE (KH3)
****
(Ref. No 8,000 series)

< CAPACITOR >

REF. NO.	PART NO.	DESCRIPTION				REMARK
C001	1-163-139-00	CERAMIC CHIP	820PF	5%	50V	
C003	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C004	1-126-964-11	ELECT	10uF	20%	50V	
C005	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C006	1-126-964-11	ELECT	10uF	20%	50V	
C007	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C008	1-126-967-11	ELECT	47uF	20%	10V	
C009	1-126-964-11	ELECT	10uF	20%	50V	
C010	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C011	1-124-903-11	ELECT	1uF	20%	50V	
C012	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	
C013	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C014	1-124-903-11	ELECT	1uF	20%	50V	
C015	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C016	1-163-077-91	CERAMIC CHIP	0.1uF		50V	
C017	1-126-967-11	ELECT	47uF	20%	10V	
C018	1-124-903-11	ELECT	1uF	20%	50V	
C019	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C020	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C021	1-124-903-11	ELECT	1uF	20%	50V	
C022	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C023	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C024	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C025	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C026	1-126-964-11	ELECT	10uF	20%	50V	
C027	1-124-499-11	ELECT, NONPOLAR	1uF	20%	50V	
C050	1-124-638-11	ELECT	22uF	20%	10V	
C051	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C061	1-163-124-00	CERAMIC CHIP	200PF	5%	50V	
C062	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C063	1-163-093-00	CERAMIC CHIP	10PF	5%	50V	
C071	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C073	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C074	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C075	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C076	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C077	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C081	1-126-967-11	ELECT	47uF	20%	10V	
C082	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C083	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C084	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C086	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C091	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C092	1-126-967-11	ELECT	47uF	20%	10V	
C093	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C201	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C202	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C204	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C205	1-124-903-11	ELECT	1uF	20%	50V	
C206	1-126-163-11	ELECT	4.7uF	20%	50V	
C207	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C208	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C209	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C211	1-126-154-11	ELECT	47uF	20%	6.3V	
C212	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C213	1-126-301-11	ELECT	1uF	20%	50V	
C214	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C215	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C216	1-163-131-00	CERAMIC CHIP	390PF	5%	50V	
C260	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C261	1-124-584-00	ELECT	100uF	20%	10V	
C262	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V	
C263	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C264	1-124-257-00	ELECT	2.2uF	20%	50V	
C265	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C267	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C268	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	
C269	1-163-135-00	CERAMIC CHIP	560PF	5%	50V	
C270	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C273	1-162-306-11	CERAMIC	0.01uF	30%	16V	
C274	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C275	1-107-682-11	CERAMIC CHIP	1uF	10%	16V	
C276	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C801	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C802	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C803	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C804	1-164-159-11	CERAMIC	0.1uF		50V	
C805	1-163-033-91	CERAMIC CHIP	0.022uF		50V	

The components ide
mark ⚠ or dotted lin
mark. ⚠ are critical
safety. Replace only
part number specifie

REF.NO.	PART NO.	DESCRIPTION	REMARK
C806	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C807	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C808	1-124-584-00	ELECT 100uF 20% 10V	
C809	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C810	1-124-584-00	ELECT 100uF 20% 10V	
C811	1-163-059-00	CERAMIC CHIP 0.01uF 10% 50V	
C813	1-164-336-11	CERAMIC CHIP 0.33uF 25V	
C814	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C815	1-163-077-91	CERAMIC CHIP 0.1uF 50V	
C816	1-164-159-11	CERAMIC 0.1uF 50V	
C817	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C818	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C822	1-163-129-00	CERAMIC CHIP 330PF 5% 50V	
C826	1-124-229-00	ELECT 33uF 20% 10V	
C827	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C829	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C830	1-163-103-00	CERAMIC CHIP 27PF 5% 50V	
C836	1-162-638-11	CERAMIC CHIP 1uF 16V	
C838	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C839	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C840	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C841	1-163-093-00	CERAMIC CHIP 10PF 5% 50V	
C901	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C902	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C903	1-163-107-00	CERAMIC CHIP 39PF 5% 50V	
C905	1-163-113-00	CERAMIC CHIP 68PF 5% 50V	
C906	1-163-111-00	CERAMIC CHIP 56PF 5% 50V	
C907	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C921	1-126-154-11	ELECT 47uF 20% 6.3V	
C922	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
		< CONNECTOR >	
CN001	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P	
CN002	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P	
CN801	1-766-986-11	CONNECTOR, FFC/FPC 13P	
* CN802	1-564-029-00	PIN, CONNECTOR 4P	
CN803	1-506-482-11	PIN, CONNECTOR 3P	
		< DIODE >	
D001	8-719-911-19	DIODE 1SS119-25	
D008	8-719-911-19	DIODE 1SS119-25	
D009	8-719-911-19	DIODE 1SS119-25	
D010	8-719-911-19	DIODE 1SS119-25	
D011	8-719-911-19	DIODE 1SS119-25	
D012	8-719-911-19	DIODE 1SS119-25	
D091	8-719-911-19	DIODE 1SS119-25	
D801	8-719-911-19	DIODE 1SS119-25	
D802	8-719-911-19	DIODE 1SS119-25	
D803	8-719-911-19	DIODE 1SS119-25	
D804	8-719-911-19	DIODE 1SS119-25	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< IC >	
IC001	8-759-334-17	IC LA7432M-MPB	
IC002	8-752-372-11	IC CXL1510M	
IC004	1-810-636-11	IC LA7356M	
IC260	8-759-055-49	IC AN3327K	
IC801	8-759-267-78	IC HA118191ANT	
		< JUMPER RESISTOR >	
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR005	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR006	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR007	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR008	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR009	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR010	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR011	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR012	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR015	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR016	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR017	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR018	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR019	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR020	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR021	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR022	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR023	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR024	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR025	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR026	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR027	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< RESISTOR >	
JW057	1-247-807-31	CARBON 100 5% 1/4W	
		< COIL >	
L001	1-414-189-31	INDUCTOR 100uH	
L002	1-410-507-11	INDUCTOR 6.8uH	
L003	1-414-189-31	INDUCTOR 100uH	
L061	1-410-521-11	INDUCTOR 100uH	
L072	1-412-755-11	INDUCTOR 47uH	
L073	1-410-516-11	INDUCTOR 39uH	
L081	1-408-424-00	INDUCTOR 180uH	
L082	1-414-189-31	INDUCTOR 100uH	
L091	1-414-189-31	INDUCTOR 100uH	
L201	1-414-189-31	INDUCTOR 100uH	
L202	1-410-515-11	INDUCTOR 33uH	
L260	1-414-189-31	INDUCTOR 100uH	

REF.NO.	PART NO.	DESCRIPTION	REMARK
L801	1-410-525-11	INDUCTOR 220uH	
L802	1-410-525-11	INDUCTOR 220uH	
L803	1-414-189-31	INDUCTOR 100uH	
L804	1-414-189-31	INDUCTOR 100uH	
L810	1-410-524-41	INDUCTOR 180uH	
L812	1-414-189-31	INDUCTOR 100uH	
L901	1-410-511-11	INDUCTOR 15uH	
L902	1-410-511-11	INDUCTOR 15uH	
L903	1-414-189-31	INDUCTOR 100uH	
L905	1-410-515-11	INDUCTOR 33uH	
L906	1-410-507-11	INDUCTOR 6.8uH	
L907	1-410-516-11	INDUCTOR 39uH	
		< TRANSISTOR >	
Q003	8-729-421-19	TRANSISTOR UN2213	
Q005	8-729-901-06	TRANSISTOR DTA144EK	
Q006	8-729-421-19	TRANSISTOR UN2213	
Q007	8-729-421-19	TRANSISTOR UN2213	
Q010	8-729-424-67	TRANSISTOR UN2216	
Q011	8-729-424-67	TRANSISTOR UN2216	
Q012	8-729-216-21	TRANSISTOR 2SA1162Y	
Q013	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q071	8-729-901-06	TRANSISTOR DTA144EK	
Q072	8-729-424-56	TRANSISTOR UN211L	
Q074	8-729-421-19	TRANSISTOR UN2213	
Q075	8-729-421-19	TRANSISTOR UN2213	
Q076	8-729-010-05	TRANSISTOR MSB709-RT1	
Q077	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q078	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q079	8-729-010-05	TRANSISTOR MSB709-RT1	
Q080	8-729-421-19	TRANSISTOR UN2213	
Q081	8-729-421-19	TRANSISTOR UN2213	
Q082	8-729-421-19	TRANSISTOR UN2213	
Q083	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q091	8-729-421-19	TRANSISTOR UN2213	
Q831	8-729-421-19	TRANSISTOR UN2213	
Q841	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q842	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q851	8-729-421-19	TRANSISTOR UN2213	
Q852	8-729-421-19	TRANSISTOR UN2213	
Q853	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q854	8-729-010-25	TRANSISTOR MSD601-RT1	
Q855	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q861	8-729-216-21	TRANSISTOR 2SA1162Y	
Q862	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q901	8-729-216-21	TRANSISTOR 2SA1162Y	
Q902	8-729-421-19	TRANSISTOR UN2213	
Q904	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q905	8-729-421-19	TRANSISTOR UN2213	
Q906	8-729-230-49	TRANSISTOR 2SC2712-YG	

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< RESISTOR >	
R001	1-216-052-00	METAL CHIP 1.3K 5% 1/10W	
R002	1-216-295-00	METAL CHIP 0 5% 1/10W	
R004	1-216-036-00	METAL CHIP 300 5% 1/10W	
R009	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R010	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R011	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R012	1-216-295-00	METAL CHIP 0 5% 1/10W	
R016	1-247-807-31	CARBON 100 5% 1/4W	
R019	1-216-295-00	METAL CHIP 0 5% 1/10W	
R020	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R021	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R022	1-249-429-11	CARBON 10K 5% 1/4W	
R023	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R024	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R025	1-216-295-00	METAL CHIP 0 5% 1/10W	
R027	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R028	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R029	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R050	1-216-296-00	METAL CHIP 0 5% 1/8W	
R061	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R062	1-216-667-11	METAL CHIP 4.7K 0.5%1/10W	
R063	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R064	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R072	1-216-204-00	METAL GLAZE 1.8K 5% 1/8W	
R073	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R074	1-216-206-00	METAL GLAZE 2.2K 5% 1/8W	
R075	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R076	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R077	1-216-041-00	METAL CHIP 470 5% 1/10W	
R078	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R079	1-216-041-00	METAL CHIP 470 5% 1/10W	
R080	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R081	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R084	1-216-045-00	METAL CHIP 680 5% 1/10W	
R085	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R086	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R087	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R088	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R089	1-216-047-00	METAL CHIP 820 5% 1/10W	
R092	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R093	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R094	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R095	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R201	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R202	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R203	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R204	1-216-295-00	METAL CHIP 0 5% 1/10W	
R262	1-216-035-00	METAL CHIP 270 5% 1/10W	
R263	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R265	1-216-033-00	METAL CHIP 220 5% 1/10W	

REF. NO.	PART NO.	DESCRIPTION	REMARK
R266	1-216-200-11	METAL GLAZE 1.2K 5% 1/8W	
R267	1-216-035-00	METAL CHIP 270 5% 1/10W	
R268	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R271	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R276	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R801	1-216-025-00	METAL CHIP 100 5% 1/10W	
R802	1-216-037-00	METAL CHIP 330 5% 1/10W	
R805	1-216-606-11	METAL CHIP 13 0.50%1/10W	
R806	1-216-025-00	METAL CHIP 100 5% 1/10W	
R807	1-216-025-00	METAL CHIP 100 5% 1/10W	
R811	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R812	1-216-025-00	METAL CHIP 100 5% 1/10W	
R823	1-247-863-91	CARBON 22K 5% 1/4W	
R835	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R836	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R840	1-216-627-11	METAL CHIP 100 0.5%1/10W	
R841	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R842	1-216-619-11	METAL CHIP 47 0.5%1/10W	
R843	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R851	1-216-210-00	METAL GLAZE 3.3K 5% 1/8W	
R852	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R853	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R856	1-247-807-31	CARBON 100 5% 1/4W	
R858	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R859	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R861	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R862	1-216-210-00	METAL GLAZE 3.3K 5% 1/8W	
R863	1-216-047-00	METAL CHIP 820 5% 1/10W	
R864	1-216-206-00	METAL GLAZE 2.2K 5% 1/8W	
R865	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R866	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R901	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R902	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R903	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R904	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R905	1-216-025-00	METAL CHIP 100 5% 1/10W	
R906	1-249-416-11	CARBON 820 5% 1/4W	F
R907	1-216-045-00	METAL CHIP 680 5% 1/10W	
R908	1-216-043-91	METAL GLAZE 560 5% 1/10W	
R909	1-216-037-00	METAL CHIP 330 5% 1/10W	
R910	1-216-041-00	METAL CHIP 470 5% 1/10W	
R911	1-216-045-00	METAL CHIP 680 5% 1/10W	
R912	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R913	1-216-295-00	METAL CHIP 0 5% 1/10W	
R914	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R915	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R917	1-216-025-00	METAL CHIP 100 5% 1/10W	
		< VARIABLE RESISTOR >	
RV001	1-241-762-11	RES, ADJ, CARBON 2.2K	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< VIBRATOR >	
X001	1-577-380-11	VIBRATOR, CRYSTAL (3.58MHz)	
X002	1-579-608-11	VIBRATOR, CRYSTAL (4.43MHz)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
*	A-6781-610-A	VR-50 BOARD, COMPLETE (K862/K872) ********************** (Ref. No 9,000 series)	
		< CAPACITOR >	
C801	1-126-163-11	ELECT 4.7uF 20% 50V	
		< CONNECTOR >	
* CN801	1-573-821-11	CONNECTOR, BOARD TO BOARD 7P	
CN802	1-568-788-21	PIN, CONNECTOR 11P	
		< DIODE >	
D800	8-719-109-85	DIODE RD5.1ES-B2	
D801	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D802	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D803	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D804	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D805	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D806	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D807	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D808	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D810	8-719-108-12	DIODE RD9.1E-W	
D811	8-719-108-12	DIODE RD9.1E-W	
		< JUMPER RESISTOR >	
JR801	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR820	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR821	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR822	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR823	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR824	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR825	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR826	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR840	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR841	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR842	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR844	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR845	1-216-295-00	METAL CHIP 0 5% 1/10W	

REF. NO.	PART NO.	DESCRIPTION	REMARK
		< RESISTOR >	
R801	1-216-295-00	METAL CHIP 0 5% 1/10W	
R803	1-216-035-00	METAL CHIP 270 5% 1/10W	
R804	1-216-035-00	METAL CHIP 270 5% 1/10W	
R805	1-216-225-00	METAL CHIP 13K 5% 1/8W	
R806	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< VARIABLE RESISTOR >	
RV801	1-223-914-11	RES, VAR, CARBON 10K (MIC VOL1)	
RV802	1-223-914-11	RES, VAR, CARBON 10K (MIC VOL2)	
RV803	1-223-914-11	RES, VAR, CARBON 10K (ECHO)	
*	A-6782-632-A	VR-54 BOARD, COMPLETE (KH3) ********************* (Ref. No 9,000 series)	
		< CAPACITOR >	
C601	1-126-163-11	ELECT 4.7uF 20% 50V	
		< CONNECTOR >	
CN601	1-568-652-11	CONNECTOR, FLEXIBLE 21P	
		< DIODE >	
D600	8-719-420-90	DIODE MA8051-M	
D601	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D602	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D603	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D604	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D605	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D606	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D607	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D608	8-719-951-34	DIODE SLV-31YC3 (MIC 1/2, ECHO ILM)	
D610	8-719-911-19	DIODE 1SS119-25	
D611	8-719-911-19	DIODE 1SS119-25	
D612	8-719-911-19	DIODE 1SS119-25	
D613	8-719-911-19	DIODE 1SS119-25	
D614	8-719-911-19	DIODE 1SS119-25	
D615	8-719-911-19	DIODE 1SS119-25	
D616	8-719-911-19	DIODE 1SS119-25	
		< JUMPER RESISTOR >	
JR602	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR607	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR608	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR609	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR610	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR611	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR612	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR613	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR614	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR615	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR616	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR617	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR618	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR619	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR620	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR621	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR622	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR623	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR624	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR625	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW603	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW604	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW605	1-216-296-00	METAL CHIP 0 5% 1/8W	
JW606	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< RESISTOR >	
R601	1-216-295-00	METAL CHIP 0 5% 1/10W	
R603	1-216-172-00	METAL CHIP 82 5% 1/8W	
R604	1-216-172-00	METAL CHIP 82 5% 1/8W	
R605	1-216-076-00	METAL CHIP 13K 5% 1/10W	
R606	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< VARIABLE RESISTOR >	
RV601	1-223-914-11	RES, VAR, CARBON 10K (MIC VOL1)	
RV602	1-223-914-11	RES, VAR, CARBON 10K (MIC VOL2)	
RV603	1-223-914-11	RES, VAR, CARBON 10K (ECHO)	
		< SWITCH >	
S601	1-571-977-11	SWITCH, TACTIL (SCORE)	
S602	1-571-977-11	SWITCH, TACTIL (KEY/VOICE)	
S603	1-571-977-11	SWITCH, TACTIL (SELF DUET ON/OFF)	
S604	1-571-977-11	SWITCH, TACTIL (KEY −)	
S605	1-571-977-11	SWITCH, TACTIL (KEY 0)	
S606	1-571-977-11	SWITCH, TACTIL (KEY +)	
S607	1-572-907-11	SWITCH, SLIDE (COLOR SYSTEM)	
S608	1-572-907-11	SWITCH, SLIDE (SURROUND)	
S609	1-572-907-11	SWITCH, SLIDE (KARAOKE MODE)	
S610	1-572-908-11	SWITCH, SLIDE (KARAOKE)	
		MISCELLANEOUS *************	
51	1-473-209-11	SWITCH BLOCK, CONTROL (K872MN)	
51	1-473-209-21	SWITCH BLOCK, CONTROL (K872PS)	
51	1-473-209-31	SWITCH BLOCK, CONTROL (K862)	
107	1-769-354-11	CABLE, FLEXIBLE FLAT (19ARBOR)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
115	1-769-833-11	CABLE, FLEXIBLE FLAT 23P	
127	1-769-832-11	CABLE, FLEXIBLE FLAT 21P (KH3)	
158	1-500-144-11	HEAD, FE	
165	1-506-485-11	PIN, CONNECTOR 6P	
203	8-848-625-02	DRUM ASSY, ROTARY UPPER (DZR-68-R)	
D261	8-719-048-26	DIODE GL538V1 (T/S)	
M901	8-848-624-12	DRUM ASSY (DZH-68A-R)	
M902	1-698-409-11	MOTOR, DC (CAPSTAN)	
M903	X-3943-883-1	MOTOR ASSY, CAM	
Q261	8-729-025-92	PHOTO TRANSISTOR PT380F	
Q262	8-729-025-92	PHOTO TRANSISTOR PT380F	

ACCESORIES & PACKING MATERIALS

	1-473-210-11	REMOTE COMMANDER (RMT-V165)	(K872)
	1-473-210-21	REMOTE COMMANDER (RMT-V165A)	(K862)
	1-473-210-41	REMOTE COMMANDER (RMT-V165C)	(KH3)
	1-542-221-21	MICROPHNE (F-VJ3321)	
	1-575-334-11	CORD, CONNECTION	
⚠	1-696-562-11	CORD, POWER	
	1-696-593-11	CORD, CONNECTOR (PAL)	
	3-800-239-11	MANUAL, INSTORUCTION	(K862PS/K872) (ENGLISH, CHINESE)
	3-800-241-11	MANUAL, INSTORUCTION	(KH3ME/KH3PS) (ENGLISH, CHINESE)
	3-800-503-11	MANUAL, INSTORUCTION	(K862CH) (CHINESE)
	3-800-504-11	MANUAL, INSTORUCTION	(KH3CH) (CHINESE)
	3-965-391-01	CUSHION (UPPER)	(K862/K872)
	3-965-392-01	CUSHION (LOWER)	(K862/K872)
	3-965-395-01	CUSHION (UPPER)	(KH3)
	3-965-396-01	CUSHION (LOWER)	(KH3)
	X-3945-357-1	INDIVIDUAL CARTON ASSY	(K872MN)
	X-3945-358-1	INDIVIDUAL CARTON ASSY	(K872PS)
	X-3945-359-1	INDIVIDUAL CARTON ASSY	(K862PS)
	X-3945-360-1	INDIVIDUAL CARTON ASSY	(KH3PS)
	X-3945-361-1	INDIVIDUAL CARTON ASSY	(KH3ME)
	X-3945-492-1	INDIVIDUAL CARTON ASSY	(K862CH)
	X-3945-493-1	INDIVIDUAL CARTON ASSY	(KH3CH)

HARDWARE LIST

REF. NO.	PART NO.	DESCRIPTION	REMARK
#1	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#2	7-682-645-01	SCREW +PS 3X4	
#3	7-621-255-15	SCREW +B 2X3	
#4	7-682-547-04	SCREW +P 3X6	
#5	7-685-649-79	SCREW +BVTP 3X14 TYPE2 IT-3	
#6	7-685-646-81	SCREW +BVTP 3X8 TYPE2	
#7	7-621-255-25	SCREW +PTT 2X4 (S)	(K862/K872)
#8	7-624-106-04	STOP RING 3.0, TYPE-E	

The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

SECTION 6

INTERFACE AND IC PIN FUNCTION

6-1. SYSTEM CONTROL–VIDEO BLOCK INTERFACE (MA-232/242 BOARD IC201)

Signal	Pin No.		I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREAD-ING	PB	PB • PAUSE	SLOW	×2	PICTURE SEARCH		REC	REC • PAUSE
	CXP87248-077Q -084Q	CXP87248-076Q											CUE	REVIEW		
$\overline{\text{V • PB}}$	IC201 ⑲	Q355 Ⓒ	O	H	H	H	H	H	L	L	L	L	L	L	H	H
RF SW P (SW25)	IC201 ①	←	O	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1
Q VD/V MUTE	IC201 ②	←	O	L	L	L	L	L	* 2	* 3	* 3	* 3	* 3	* 3	L	L
$\overline{\text{NA • SP}}$	IC201 (91)	←	O	* 4	* 4	* 4	* 4	* 4	* 5	* 5	* 5	* 5	* 5	* 5	* 4	* 4
VIDEO LP	IC201 ㉓	←	O	* 8	* 8	* 8	* 8	* 8	* 5	* 5	* 5	* 5	* 5	* 5	* 8	* 8
REC • P	IC201 ⑤	←	O	L	L	L	L	L	L	L	L	L	L	L	L	H
REC	IC201 (98)	←	O	L	L	L	L	L	L	L	L	L	L	L	H	H
V SYNC	IC201 (66)	←	I	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
OSD MUTE	IC201 (71)	←	O	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7
CTL REC	IC201 (94)	←	O	L	L	L	L	L	L	L	L	L	L	L	H	L
$\overline{\text{NTSC}}$	IC201 ㉕	←	O	L	L	L	L	L	L	L	L	L	L	L	L	L
JOG	IC201 ㉔	←	O	L	L	L	L	L	L	H	H	H	H	H	L	L
CRC SETTEI	IC351 ⑦	←	O	L	L	L	L	L	L	L	L	L	L	L	* 9	* 9

- * 1. 25Hz 50% duty pulse synchronizing with drum rotation.
- * 2. Normally "L". "H" when the video signal is not detected.
- * 3. V period "H" pulse.
- * 4. "L" in the SP mode. Selected according to the recording mode.
- * 5. Selected according to the tape recording mode.
- * 6. Composite sync signal (positive).
- * 7. "H" when menu screen or gray back screen.
- * 8. Selected by REC mode, "L" in the SP mode.
- * 9. "H" while APC is set.

Mode / Signal	SP	LP	EP
$\overline{\text{SP}}$ (91)	L	H	H
LP ㉓	L	L	H

6-2. SYSTEM CONTROL–SERVO PERIPHERAL CIRCUIT INTERFACE (MA-232/242 BOARD IC201)

Signal	Pin No.		I/O	STOP	FF	REW	TAPE THREAD-ING	TAPE UNTH-READING	PB	PB • PAUSE	SLOW	×2	PICTURE SEARCH		REC	REC • PAUSE	PB INDEX WRT/ERS
	CXP87248-077Q -084Q	CXP87248-076Q											CUE	REVIEW			
REC CTL	IC201 ⑦	←	O	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	* 1	
$\overline{\text{CAP STOP}}$	IC201 ㊳	←	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	* 3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
STEP PLS	IC201 ㉖	←	O	L	L	L	L	L	L	L	* 2	L	L	L	L	L	
CTL REC	IC201 (94)	←	O	L	L	L	L	L	L	L	L	L	L	L	H	L	H
CTL INDEX	IC201 (95)	←	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	IC201 (67)	←	I	H	* 6	* 6			* 1	H/L	* 2	* 6	* 6	* 6	* 1	H	
DRUM PG	IC201 (68)	←	I	* 4	* 7	* 7	* 5	* 5	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	
DRUM FG	IC201 (69)	←	I	* 4	* 8	* 8	* 5	* 5	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	
CAP FG	IC201 (70)	←	I	H/L	* 6	* 6	* 5	* 5	* 6	H/L	* 9	* 6	* 6	* 6	* 6	H/L	
CAP DA	IC201 (73)	←	O	* 10	* 10	* 10	* 10	* 10	* 11	* 10	* 10	* 11	* 11	* 11	* 11	* 10	
DRUM DA	IC201 (74)	←	O	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	* 12	
CTL STEP	IC351 (93)	←	O	L	L	L	L	L	L	L	* 13	L	L	L	L	L	

* 1. 25Hz pulse.
* 2. Pulse in tape running.
* 3. Reverse logic pulse of STEP PLS.
* 4. "L" when drum rotation stops.
* 5. Unstable period pulse.
* 6. Pulse of period proportionate to tape speed.
* 7. 25Hz pulse.
* 8. 300Hz pulse.
* 9. Pulse in tape running.
* 10. Approx. 2 msec. period "H" or "L" pulse.
* 11. Approx. 1.5 msec. period "H" or "L" pulse.
* 12. Approx. 3 msec. period "H" or "L" pulse.
* 13. "H" in FWD direction and STEP drive.

6-3. SYSTEM CONTROL–MECHANISM BLOCK INTERFACE (MA-232/242 BOARD IC201)

Signal	Pin No.		I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE THREAD-ING	TAPE UNTH-READING	STOP	FF	REW	PB	PB • PAUSE	SLOW	×2	PICTURE SEARCH		REC	REC • PAUSE
	CXP87248-077Q -084Q	CXP87248-076Q														CUE	REVIEW		
CAM LOAD	IC201 (76)	←	O	L	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L
CAM UNLOAD	IC201 (75)	←	O	L	L	H	L	H	L	L	L	L	L	L	L	L	L	L	L
CAM 12V	IC201 ㉛	←	O		H	L	H	L											
MODE 1	IC201 ㉚	←	I	H	L	L	* 1	* 1	H	H	H	H	H	H	H	H	L	H	H
MODE 2	IC201 ㉙	←	I	L	L	L	* 1	* 1	L	L	L	H	H	H	H	H	H	H	H
MODE 3	IC201 ㉘	←	I	L	L	L	* 1	* 1	H	H	H	L	H	H	L	L	H	L	H
MODE 4	IC201 ㉗	←	I	L	H	H	* 1	* 1	H	L	L	L	L	L	L	L	L	L	L
REC PRF	IC201 (65)	←	I	L	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2
T REEL FG	IC201 (64)	←	I	H/L	H/L	H/L	H/L	H/L	H/L	* 3	* 3	* 3	H/L	* 3	* 3	* 3	* 3	* 3	H/L
S REEL FG	IC201 (63)	←	I	H/L	H/L	H/L	* 3	* 3	H/L	* 3	* 3	* 3	H/L	* 3	* 3	* 3	* 3	* 3	H/L
END LED	IC201 ㉜	←	O (O.D)	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
CAP TRQ 1	IC201 ㉞	←	O (O.D)											* 1					
CAP TRQ 2	IC201 ㉝	←	O (O.D)										L	* 1					L
CAP TRQ 3	IC201 ⑮	←	O (O.D)							H	H			* 1		H	H		
$\overline{\text{CAP STOP}}$	IC201 ㊳	←	O (O.D)	L	L	L	H	H	L	H	H	H	L	* 5	H	H	H	H	L
CAP RVS	IC201 (72)	←	O	H			L	H	H/L	L	H	L	L	L/ * 5	L	L	H	L	L
CAP DA	IC201 (73)	←	O																
T SENS	IC201 ㉑	←	I	* 4	* 4	* 4	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7
S SENS	IC201 ㉒	←	I	* 4	* 4	* 4	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7

* 1. Uncertainty.
* 2. "L" when the erasing protection tab is bent, "H" when not bent.
* 3. Pulse of period proportionate to reel rotating speed.
* 4. Approx. 2 msec. period "H" pulse.
* 5. Pulse in tape running.
* 6. "L" only in tape running and when CAP RVS is "H".
* 7. Normally "L". 2 msec. period "H" pulse when tape top or tape end is detected.

6-4. SYSTEM CONTROL–SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA-232/242 BOARD IC201)

Signal	Pin No.		I/O	I/O Level
	CXP87248-077Q -084Q	CXP87248-076Q		
$\overline{\text{ASURA RESET}}$	IC201 ㊵	←	I	Normally "H". "L" when service interruption is detected or restored.
$\overline{\text{ASURA CS}}$	IC201 ㊹	←	I	Chip select signal from the timer microprocessor. V period "L" pulse.
SI BUS	IC201 ㊺	←	I	Serial communication data from the timer microprocessor. V period "L" pulse.
SO BUS	IC201 ㊻	←	O	Serial communication data to the timer microprocessor. V period "L" pulse.
S CLK	IC201 ㊼	←	I	Serial communication clock with the timer microprocessor. V period "L" pulse.

6-5. SYSTEM CONTROL–AUDIO BLOCK INTERFACE (MA-232/242 BOARD IC201)

Signal	Pin No.		I/O	STOP	FF	REW	TAPE LOADING	TAPE UNLOADING	PB	PB • PAUSE	SLOW	×2	PICTURE SEARCH		REC	REC • PAUSE
	CXP87248-077Q -084Q	CXP87248-076Q											CUE	REVIEW		
AF ENVELOP	IC201 (61)	←	I	AF RF envelope signal input pin for auto tracking.												
NA PB	IC201 (83)	←	O	L	L	L	L	L	H	H	H	H	H	H	L	L
A MUTE	IC201 (92)	←	O (O.D)	L	L	L	L	L	∗1	H	H	H	H	H	L	L
$\overline{\text{NA SP}}$	IC201 (91)	←	O	∗2	∗2	∗2	∗2	∗2	∗3	∗3	∗3	∗3	∗3	∗2	∗2	∗2
NA REC • $\overline{\text{P}}$	IC201 ⑰	←	O	L	L	L	L	L	L	L	L	L	L	L	H	L
AF REC • $\overline{\text{P}}$	IC201 ④	←	O	L	L	L	L	L	L	L	L	L	L	L	H	L
AF SWP	IC201 (100)	←	O	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1
AF SW POSITION	IC201 (51)	←	I	Input pin for AF switching position adjustment.												
$\overline{\text{FULL ERS}}$	IC201 ㊱	←	O (O.D)	H	H	H	H	H	H	H	H	H	H	H	L	H

∗ 1. 25Hz 50% duty pulse approximately 5 msec. delayed from RF SW P.

∗ 2. Selected according to SP/LP selector. "L" in the SP mode, "H" in the LP mode.

∗ 3. Selected according to the tape recording mode. "L" in the SP mode, "H" in the LP mode.

6-6. SYSTEM CONTROL–RF MODULATOR, INPUT SELECTION BLOCK INTERFACE (MA-232/242 BOARD IC201)

Signal	Pin No.		I/O	I/O Level		
	CXP87248-077Q -084Q	CXP87248-076Q		TUNER	LINE 1	LINE 2
LINE 1	IC201 (96)	IC201 ⑥	O	L	H	L
LINE 2	IC201 (97)	IC201 (99)	O	L	L	H

6-7-1. SERVO/SYSTEM CONTROL MICROPROCESSOR CXP87248-077Q/-084Q (MA-232 BOARD IC201) PORT FUNCTION DESCRIPTION

CXP87248-077Q for SLV-K872MN/K872PS, CXP87248-084Q for SLV-K862CH/K862PS

Pin No.	Signal	I/O	Function
1	RF SWP	O	RF switching pulse.
2	QVD	O	False VD.
3	QHD ENBL	O	False HD voltage level control.
4	AF REC P	O	Hi-Fi recording control.
5	REC P	O	Recording signal.
6	NT JOG	O	NTSC JOG signal. H: NTSC JOG mode.
7	REC CTL	I/O	REC CTL.
8	DSP SO	O	DSP serial communication signal data.
9	DSP SCLK	O	DSP serial communication signal clock.
10	DSP SIRQ	O	DSP serial communication signal request.
11	DSP SRDY	O	DSP serial communication ready signal.
12	DSP SIAK	I	DSP serial communication acknowledge signal.
13	DSP PO	O	DSP control signal select.
14	DSP RST	I	DSP reset signal.
15	CAP TRQ3	I	Capstan current control.
16	YNR (RENTAL)	I/O	YNR control.
17	NA REC P	O	Normal audio recording mode. H: recording mode.
18	ME SECAM	I	H: ME SECAM.
19	V PB	O	Video system playback mode reversal. L: Playback.
20	HEAD CONT	O	Head change control.
21	T SENS	I	Tape top sensor input.
22	S SENS	I	Tape end sensor input.
23	VIDEO LP	O	H in LP mode.
24	JOG	O	H: JOG.
25	NTSC	O	H: PAL.
26	STEP PLS	O	Step pulse, H: Capstan step driving.
27	MODE 4	I	Cam encoder data 4.
28	MODE 3	I	Cam encoder data 3.
29	MODE 2	I	Cam encoder data 2.
30	MODE 1	I	Cam encoder data 1.
31	CAM 12V	O	CAM motor voltage change.
32	END LED	O	Top/end detection lamp lighting control.
33	CAP TRQ 2	O	Capstan current control signal 2. L: FF/REW to STEP.
34	CAP TRQ 1	O	Capstan current control signal 1. L: SLOW speed down.
35	3.58 NTSC	O	Tuner audio selection signal. H: 3.58 Xtal.
36	FULL ERS	O	Full erase control. (Not used. (open))
37	PAL 60	O	H: NTSC on PAL TV.
38	CAP STOP	O	Capstan stop reversal. L: Capstan stop.
39	MP	I	Fixed to L.

Pin No.	Signal	I/O	Function
40	ASURA RESET	I	System reset input.
41	VSS		GND.
42	XTAL		System clock 16MHz.
43	EXTAL		
44	ASURA CS	I	Chip select signal. (HI-17 board IC302)
45	SI BUS	I	Serial communication signal.
46	SO BUS	O	
47	S CLK	I	
48	AU METER R	I	Level meter signal data input (Rch)
49	AD	I	AD input for APC 2.
50	AU METER L	I	Level meter signal data input (Lch)
51	AFSW POS	I	Hi-Fi switching position adjustment.
52	A VSS		GND.
53	A VREF		AD port reference input. (UNSW 5V)
54	A VDD		UNSW 5V.
55	NT JUDGE	I	4.43/3.58 judge input.
56	MIC DET	I	MIC signal detection input.
57	AMS	I	KARAOKE AMS input. No sound position detecting signal is in.
58	(MIC KEY cont.)	I	Not used. (Gnd)
59	(ECHO VR)	I	Not used. (Gnd)
60	RF ENV	I	Video playback signal envelope.
61	AF ENV	I	Hi-Fi audio playback signal envelope.
62	RF SW POS	I	Video head switching position adjustment.
63	S REEL FG	I	S side reel FG input.
64	T REEL FG	I	T side reel FG input.
65	C IN/REC PRF	I	Cassette IN and erasing protection tab detection switch input.
66	V SYNC	I	Composite sync input.
67	PB CTL	I	Servo CTL input.
68	DRM PG	I	Drum PG input.
69	DRM FG	I	Drum FG input.
70	CAP FG	I	Capstan FG input.
71	OSD MUTE	O	Video output mute signal. H: Gray back. (Not used. (open))
72	CAP RVS	O	Capstan reverse control. H: Reverse.
73	CAP DA	O	Capstan D/A output.
74	DRUM DA	O	Drum D/A output.
75	CAM UNLOAD	O	Loading motor rotaing direction control.
76	CAM LOAD	O	
77	KR UPPER	I	KARAOKE SCORE, Level judge signal.
78	KR LOWER	I	

Pin No.	Signal	I/O	Function
79	$\overline{\text{SOUND}}$	I	DSP MIC signal and Music signal detection input. (L: Sound is in.)
80	SO 1	O	Expanded port data.
81	CLK 1	I	Expanded port clock.
82	VIB ON	I	Self Duet, Vibrate effect action input.
83	NAPB	O	Audio output control signal. H: Normal audio playback.
84	PWM	O	PWM output for APC2.
85	RMC	O	Not used. (open)
86	N. C.	I	Not used. (open)
87	TX		Not used. (open)
88	VSS		GND.
89	VDD		UNSW 5V.
90	VDD		UNSW 5V.
91	$\overline{\text{NA}}$ $\overline{\text{SP}}$	O	For normal audio. L: SP mode.
92	A MUTE	O	Audio mute. H: Mute.
93	CTL STEP	O	CTL amp, STEP operation control.
94	CTL REC	O	H: CTL write.
95	CTL INDEX	O	Index control signal rewrite. H: Erase.
96	LINE 1	O	Input selection control signal.
97	LINE 2	O	Input selection control signal.
98	REC	O	Head amplifier recording power supply.
99	PAL JOG	O	PAL JOG signal. H: PAL JOG mode.
100	$\overline{\text{AF}}$ SWP	O	AF switching pulse.

6-7-2. SERVO/SYSTEM CONTROL MICROPROCESSOR CXP87248-076Q (MA-242 BOARD IC201) PORT FUNCTION DESCRIPTION

for SLV-KH3CH/KH3ME/KH3PS

Pin No.	Signal	I/O	Function
1	$\overline{\text{RF}}$ SWP	O	RF switching pulse.
2	QVD	O	False VD.
3	$\overline{\text{QHD}}$ ENBL	O	False HD voltage level control.
4	$\overline{\text{AF REC P}}$	O	Hi-Fi recording control.
5	REC P	O	Recording signal.
6	LINE 1	O	Input selection control signal.
7	$\overline{\text{REC}}$ CTL	I/O	REC CTL.
8	DSP SO	O	DSP serial communication signal data.
9	DSP SCLK	O	DSP serial communication signal clock.
10	DSP SIRQ	O	DSP serial communication signal request.
11	DSP SRDY	O	DSP serial communication ready signal.
12	DSP SIAK	I	DSP serial communication acknowledge signal.
13	DSP PO	O	DSP control signal select.
14	KR AU CONT	I/O	Not used. (KARAOKE AUDIO control signal for no DSP model.)
15	CAP TRQ3	I	Capstan current control.
16	YNR (RENTAL)	I/O	YNR control.
17	$\overline{\text{NAREC P}}$	O	Normal audio recording mode. H: recording mode.
18	ME SECAM	I	H: ME SECAM
19	H DET	I	H DET signal input.
20	HEAD CONT	O	Head change control.
21	T SENS	I	Tape top sensor input.
22	S SENS	I	Tape end sensor input.
23	VIDEO LP	O	H in LP mode.
24	JOG	O	H: JOG.
25	$\overline{\text{NTSC}}$	O	H: PAL.
26	STEP PLS	O	Step pulse, H: Capstan step driving.
27	MODE 4	I	Cam encoder data 4.
28	MODE 3	I	Cam encoder data 3.
29	MODE 2	I	Cam encoder data 2.
30	MODE 1	I	Cam encoder data 1.
31	CAM 12V	O	CAM motor voltage change.
32	END LED	O	Top/end detection lamp lighting control.
33	CAP TRQ 2	O	Capstan current control signal 2. L: FF/REW to STEP.
34	CAP TRQ 1	O	Capstan current control signal 1. L: SLOW speed down.
35	3.58 NTSC	O	Tuner audio selection signal. H: 3.58 Xtal.
36	$\overline{\text{FULL ERS}}$	O	Full erase control. (Not used. (open))
37	PAL 60	O	H: NTSC on PAL TV.
38	CAP $\overline{\text{STOP}}$	O	Capstan stop reversal. L: Capstan stop.
39	MP	I	Fixed to L.
40	$\overline{\text{ASURA RESET}}$	I	System reset input.
41	VSS		GND.
42	XTAL		System clock 16MHz.
43	EXTAL		
44	$\overline{\text{ASURA CS}}$	I	Chip select signal.
45	SI BUS	I	Serial communication signal.
46	SO BUS	O	
47	S CLK	I	
48	AU METER R	I	Level meter signal data input (Rch)
49	AD	I	AD input for APC 2.
50	AU METER L	I	Level meter signal data input (Lch)
51	AFSW POS	I	Hi-Fi switching position adjustment.
52	A VSS		GND.
53	A VREF		AD port reference input. (UNSW 5V)
54	A VDD		UNSW 5V.
55	NT JUDGE	I	4.43/3.58 judge input.
56	DEST	I	Destination judge input..
57	AMS	I	KARAOKE AMS input. No sound position detecting signal is in.
58	MIC KEY CON	I	MIC key control input.
59	KR ECHO VR	I	ECHO voltage level input.
60	RF ENV	I	Video playback signal envelope.
61	AF ENV	I	Hi-Fi audio playback signal envelope.
62	RF SW POS	I	Video head switching position adjustment.
63	S REEL FG	I	S side reel FG input.
64	T REEL FG	I	T side reel FG input.
65	C IN/REC PRF	I	Cassette in and erasing protection tab detection switch input.
66	V SYNC	I	Composite sync input.
67	PB CTL	I	Servo CTL input.
68	DRM PG	I	Drum PG input.
69	$\overline{\text{DRM FG}}$	I	Drum FG input.
70	CAP FG	I	Capstan FG input.
71	POWER CONT	O	Main power supply control signal. (and O.S.D Mute.)
72	CAP RVS	O	Capstan reverse control. H: Reverse.
73	$\overline{\text{CAP}}$ DA	O	Capstan D/A output.
74	$\overline{\text{DRM}}$ DA	O	Drum D/A output.
75	CAM UNLOAD	O	Loading motor rotaing direction control.
76	CAM LOAD	O	
77	KR UPPER	I	KARAOKE SCORE, Level judge signal.
78	KR LOWER	I	

Pin No.	Signal	I/O	Function
79	$\overline{\text{SOUND}}$	I	DSP MIC signal and Music signal detection input. (L: Sound is in.)
80	SO 1	I/O	Expanded port data.
81	CLK 1	I/O	Expanded port clock.
82	VIB ON	I	Self Duet, Vibrate effect action input.
83	NAPB	O	Audio output control signal. H: Normal audio playback.
84	PWM	O	PWM output for APC2.
85	RMC	I	Remote control input.
86	N. C.	I	Not used. (open)
87	TX		Not used. (open)
88	VSS		GND.
89	VDD		UNSW 5V.
90	VDD		UNSW 5V.
91	$\overline{\text{NA SP}}$	O	For normal audio. L: SP mode.
92	A MUTE	O	Audio mute. H: Mute.
93	CTL STEP	O	CTL amp, STEP operation control.
94	CTL REC	O	H: CTL write.
95	CTL INDEX	O	Index control signal rewrite. H: Erase.
96	$\overline{\text{OSD CS}}$	O	Character generator chip select signal. (MA-242 board IC401)
97	$\overline{\text{DRIVER CS}}$	O	FIP control driver chip select signal. (HI-18 board IC301)
98	REC	O	Head amplifier recording power supply.
99	LINE 2	O	Input selection control signal.
100	$\overline{\text{AF}}$ SWP	O	AF switching pulse.

6-7-3. SERVO/SYSTEM CONTROL DRIVER HD49783FP (MA-232/242 BOARD IC351) PORT FUNCTION DESCRIPTION

Pin No.	Signal	I/O	Function
7	ORCSOKUTEI	O	0: EE/REC/PB, 1: Set up a output only.
9	$\overline{\text{RP SP}}$	O	L: SP mode.
10	ORC DEFAULT	O	ORC default range output request.
11	VPB	O	Video system playback mode reversal.
12	ORC3	O	ORC curent control port3.
13	ORC2	O	ORC curent control port2.
14	ORC1	O	ORC curent control port1.
15	ORC0	O	ORC curent control port0.

6-7-4. KARAOKE FUNCTION CONTROL DRIVER HD49783FP (KR-31 BOARD IC509) PORT FUNCTION

Pin No.	Signal	I/O	Function
7	KARALED	O	KARAOKE LED. H: LED on a light.
9	BAR	O	SURROUND MODE: BAR
10	HALL	O	SURROUND MODE: HALL
11	KMUTE	O	KARAOKE Mute.
12	PON	O	KARAOKE Pon.
13	ASSIST	O	VOCAL Assist.
14	KARA ON	O	$\overline{\text{KARAOKE}}$/Normal.
15	KARA ON	O	KARAOKE/$\overline{\text{Normal}}$.

6-8-1. TIMER/TUNER CONTROL MICROPROCESSOR MB89096PF-G-201(182)-BND (HI-17 BOARD IC302) PORT FUNCTION DESCRIPTION

for SLV-K862CH/K862PS/K872MN/K872PS

Pin No.	Signal	I/O	Function
1	CL 1		Liquid crystal oscillation pin (32 kHz). (for clock)
2	CL 0		
3	MOD 0 (GND)		Operation mode specification pin (GND when used).
4	MOD 1 (GND)		
5	X 0		Liquid crystal oscillation pin (12 MHz). (for main)
6	X 1		
7	VSS		GND.
8	RESET	I	Reset input pin.
9–12	N. C.	O	Not used. (open)
13	CG CTL	O	OSD clock control. (Not used)
14	TUNER V	I	TUNER V Sync signal input.
15	ASURA RESET	O	S/S micon (MA-232 board IC201) reset signal.
16	CG CS	O	Character generator chip select signal. (MA-232 board IC401)
17	POWER FAIL	I	Power voltage drop detection pin.
18	V SYNC	I	V sync input.
19	POWER CONT	O	Main power supply control signal.
20	ASURA CS	O	S/S micon chip select signal. (MA-232 board IC201)
21	H DET	I	H DET signal input.
22	N. C.	O	Not used. (open)
23	SCL	I/O	I^{2}C BUS (clock)
24	SDA	I/O	I^{2}C BUS (data)
25	N. C	O	Not used. (open)
26	N. C.	O	Not used. (open)
27	F MONO	O	Tuner Audio select.
28	CMOD	I	Normally GND. 5V: Connected to micon jig.
29	MAIN/SAP	O	MAIN/SAP judge signal output.
30	STEREO	I/O	Stereo judge input.
31	SAP	I/O	MAIN/SAP judge input.
32	SIRCS IN	I	Remote control input.
33	PLL CLOCK	O	Tuner PLL clock.
34	PLL DATA	O	Tuner PLL data.
35	PLL ENABLE	O	Tuner chip select.
36	TA MUTE	O	Tuner audio mute.
37	SIRCS OUT	O	SIRCS signal output.
38	A PRST	O	Tuner sensitivity select signal for auto preset.
39–42	S0–S3	O	FDP segment 0–3.
43–48	S4–S9	O	FDP segment 4–9.
49	VDD		D 6V.
50–52	S10–S12	O	FDP segment 10–12.
53	VFDP		–30V.
54–57	S13–S16	O	FDP segment 13–16.
58	VSS		GND.
59–61	S17–S19	O	FDP segment 17–19.
62–66	G11–G7	O	FDP grid 11–7.
67	VDD		D 6V.
68–74	6G–0G	O	FDP grid 6–0.
75	LED D CS	O	LED driver chip select signal. (MF-267 board IC401)
76	KR MUTE	O	
77	SI BUS	I	Serial data input.
78	SO BUS	O	Serial data output.
79	S CLK	O	Serial communication clock.
80	MEM CS	O	EEPROM CS. (HI-17 board IC301)
81	MEM CLK	O	EEPROM CLOCK.
82	MEM DATA	I/O	EEPROM DATA.
83	AVSS		GND.
84	AFT	I	Ground wave tuner AFT detection.
85–87	A/D 1–A/D 3	I	A/D 1: RF AGC level input. A/D 2: ECHO level input. A/D 3: MIC key control SW input.
88–91	A/D 4–A/D 7	I	Membrane key reading.
92	AVDD	I	D 6V.
93	A/D 8	I	Membrane key reading.
94	DEST 1	I	Destination discrimination.
95	DEST 2	I	
96	A/D 9	I	A/D SW input.
97	LANC IN	I	LANC input.
98	LANC OUT	O	LANC output.
99	BUZZER	O	Buzzer output/clock liquid crystal frequency division output.
100	VDD		D 6V.

6-8-2. FIP, I/O CONTROL DRIVER CXP2201AQ (HI-18 BOARD IC301) PORT FUNCTION DESCRIPTION

for SLV-KH3CH/KH3ME/KH3PS

Pin No.	Signal	I/O	Function
1–2	K2–K3	I	Key function input. (matrix data)
3	VDD		D 5V.
4–10	S0–S6	O	FDP segment S13–S6 and function key data output.
11	S7	O	Function key data output.
12–18	S8–S14	O	FDP segment S6–S0.
19–21	T8–T6	O	Not used. (open)
22	N. C	O	Not used. (open)
23	T5	O	Not used. (open)
24–28	T4–T0	O	G0–G4
29	VFDP		–30V.
30	POWER CONT	O	Power LED control signal. (Not used. (open))
31	REC LED	O	REC LED control signal.
32	A-DUB LED	O	A-DUB LED control signal.
33	KD		Not used. (open)
34	N. C		Not used. (open)
35	SO	O	Serial data output.
36	SI	I	Serial data input.
37	CLK	I	Serial clock input.
38	$\overline{\text{CS}}$	I	Driver chip select signal (MA-242 board IC201)
39	$\overline{\text{RST}}$	I	Reset. (not connection)
40	EXT	I	System clock 4.0 MHz.
41	XT	O	
42	VSS		GND.
43–44	K0–K1	I	Key function input. (matrix data)

6-8-2. FIP, I/O CONTROL DRIVER CXP2201AQ (HI-18 BOARD IC301) PORT FUNCTION DESCRIPTION

for SLV-KH3CH/KH3ME/KH3PS

Pin No.	Signal	I/O	Function
1–2	K2–K3	I	Key function input. (matrix data)
3	VDD		D 5V.
4–10	S0–S6	O	FDP segment S13–S6 and function key data output.
11	S7	O	Function key data output.
12–18	S8–S14	O	FDP segment S6–S0.
19–21	T8–T6	O	Not used. (open)
22	N. C	O	Not used. (open)
23	T5	O	Not used. (open)
24–28	T4–T0	O	G0–G4
29	VFDP		–30V.
30	POWER CONT	O	Power LED control signal. (Not used. (open))
31	REC LED	O	REC LED control signal.
32	A-DUB LED	O	A-DUB LED control signal.
33	KD		Not used. (open)
34	N. C		Not used. (open)
35	SO	O	Serial data output.
36	SI	I	Serial data input.
37	CLK	I	Serial clock input.
38	$\overline{\text{CS}}$	I	Driver chip select signal (MA-242 board IC201)
39	$\overline{\text{RST}}$	I	Reset. (not connection)
40	EXT	I	System clock 4.0 MHz.
41	XT	O	
42	VSS		GND.
43–44	K0–K1	I	Key function input. (matrix data)

SECTION 7
ADJUSTMENTS

7-1. MECHANICAL ADJUSTMENTS

For the procedures how to adjust and check the mechanism, as well as how to replace mechanical parts, refer to the VHS Mechanical Adjustment Manual IV (H MECHANISM) (9-973-623-11).
However, for the procedures how to set the Track Shift mode, refer to the following text.

7-2. ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 7-10 for the adjustment.

SLV-K862CH/K862PS/K872PS/K872MN MODEL	CV-29 BOARD DC-62 BOARD HI-17 BOARD MF-267 BOARD PS-340 BOARD RV-42 BOARD
SLV-KH3CH/KH3PS/KH3ME MODEL	CV-30 BOARD DC-63 BOARD HI-18 BOARD MF-268 BOARD PS-341 BOARD RV-43 BOARD

2-1. PREPARATION BEFORE ADJUSTMENT

2-1-1. Equipment Required

The measuring instruments used for this alignment include:

[Instruments for Use]

1) Monitor TV
2) Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10: 1 should be used unless otherwise specified.)
3) Frequency counter (8 columns or more)
4) PAL and SECAM pattern generator
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion rate meter
10) Sound dual multiplex signal generator
11) Alignment tape
    Part No : H7099052H (MH-2)
12) Extension cable
    ① HI-17/18 Board
    - HI-17/18 board CN305 ↔ MA-232/242 board CN904
    - HI-17/18 board CN304 ↔ MA-232/242 board CN905
      Part No : J-6090-053-A (19 pin)

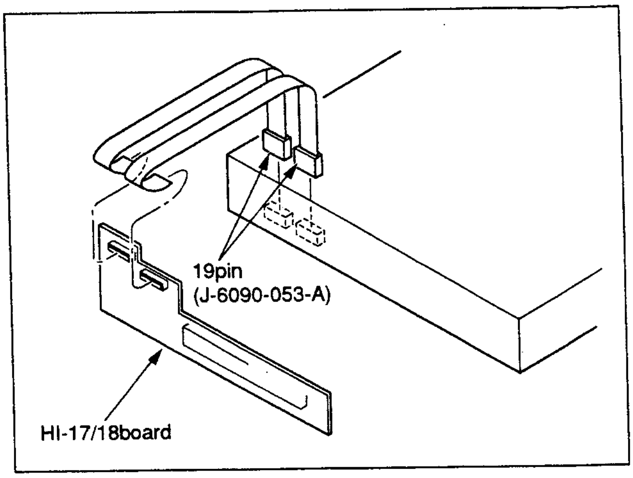


Fig. 7-2-1.

② RV-42/43 Board
- RV-42/43 board CN1 ↔ MA-232/242 board CN908
- RV-42/43 board CN2 ↔ MA-232/242 board CN907
  Part No : J-6090-025-A (14 pin)
- RV-42/43 board CN801 ↔ Drum Head flexible
  Part No : J-6090-054-A (13 pin)

③ HF-34 Board
- HF-34 board CN101 ↔ MA-232/242 board CN902
- HF-34 board CN102 ↔ MA-232/242 board CN901
  Part No : J-6090-047-A (11 pin)

④ CV-29/30 Board
- CV-29/30 board CN502 ↔ MA-232/242 board CN906
  Part No : J-6090-048-A (10 pin)

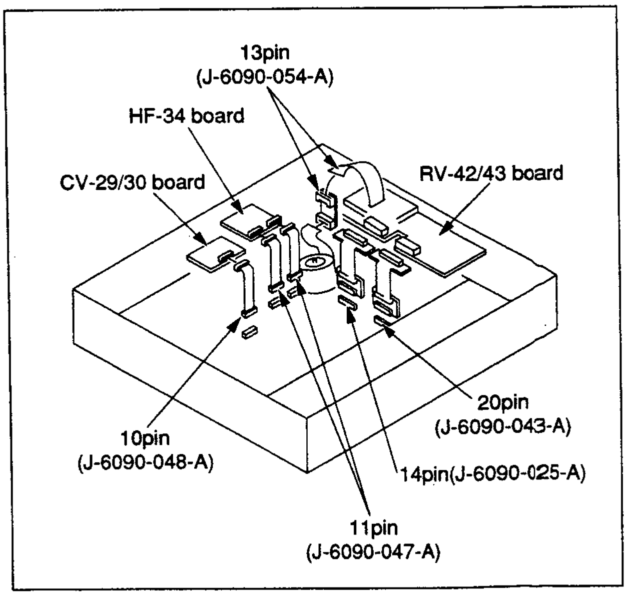


Fig. 7-2-2.

2-1-2. Equipment connection

Unless otherwise specified, connect and adjust the measuring instruments as shown is the following diagram.

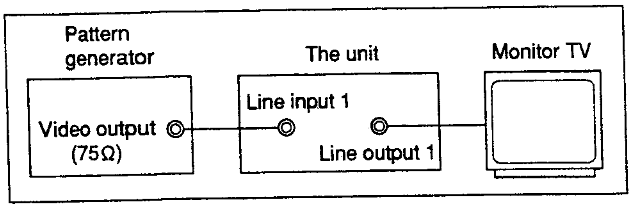

Pattern generator
The unit
Monitor TV
Video output
(75Ω)
Line input 1
Line output 1

Fig. 7-2-3.

Unless otherwise specified, place the switches and controls of this unit in the following positions:

- CHANNEL switch .... LINE 1
- TAPE SPEED (SP/EP) switch .... SP

2-1-3. Check of Input Signal

Because the video signal obtained from the pattern generator is used as the adjustment signal for the adjustment, the video output signal is required to satisfy the specified value.

Connect the oscilloscope to the picture input terminal (terminal board). And check that the synchronizing signal amplitude of the video signal is approximately 0.3V, the amplitude of the picture part is approximately 0.7V, the amplitude of the burst signal is approximately 0.3V and is flat, and the ratio of level between the burst signal and the "red" signal is 0.30 : 0.66. The video signal (color bar) used for the adjustment is shown in the fig. 7-2-4.

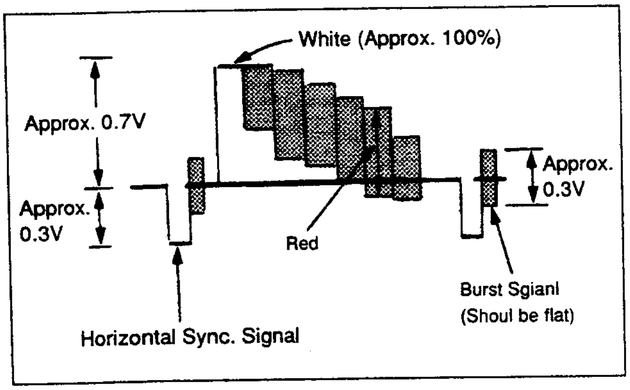

White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Approx. 0.3V
Red
Burst Sgianl
(Shoul be flat)
Horizontal Sync. Signal

Fig. 7-2-4. Color bar signal of the pattern generator

2-1-4. Alignment Tape

- Contents of MH-2 (Normal-VHS)

	Mode	Period	Video signal	Audio signal
1	SP	10 minutes	Stair step	7kHz
2		5 minutes	—	3kHz
3		10 minutes	Color bar	1kHz
4		3 minutes	RF sweep	—

2-1-5. Specified Input-output Level and the Impedance

LINE IN 1 and 2

VIDEO IN — Phono jack (1)
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative

AUDIO IN — Phono jack (2)
Input level: 327mVrms
Input impedance: more than 47 kilohms

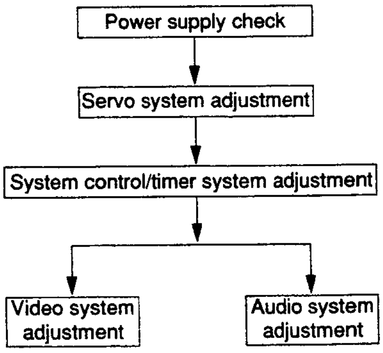
LINE OUT

VIDEO OUT — Phono jack (1)
Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative

AUDIO OUT — Phono jack (2)
Standard output: 327mVrms
Load impedance: 47 kilohms
Output impedance: less than 10 kilohms

2-1-6. Adjustment Procedures

Perform the adjustment following the procedures given below.


Power supply check
Servo system adjustment
System control/timer system adjustment
Video system adjustment
Audio system adjustment

2-2. POWER SUPPLY CHECK

2-2-1. Output Voltage Check (PS-340/341 Board)

Mode	POWER ON
Measuring instrument	Digital voltmeter
38V check	
Measurement point	CN101 Pin ①
Specified value	38±3Vdc
13V check	
Measurement point	CN101 Pin ③④
Specified value	13±1Vdc
MTR 12V check	
Measurement point	CN101 Pin ⑤⑥
Specified value	12.1±1Vdc
SW 12V check	
Measurement point	CN101 Pin ⑩
Specified value	12.0±0.5Vdc
SW 5V check	
Measurement point	CN101 Pin ⑫
Specified value	5.2±0.5Vdc
D 6V check	
Measurement point	CN101 Pin ⑮⑯
Specified value	5.9±0.5Vdc
-10V check (PS-340) -13V check (PS-341)	
Measurement point	CN101 Pin ⑱
Specified value	−10±2Vdc/−13±2Vdc (PS-340/341)
D 6V check	
Measurement point	CN101 Pin ⑮
Specified value	5.9±0.5Vdc
-30V check	
Measurement point	CN102 Pin ⑩
Specified value	−29±3Vdc

[Check Method]

1) Check that each voltage satisfies the specified value.

2-3. SERVO SYSTEM ADJUSTMENT

2-3-1. RF Switching Position Adjustment (CV-29/30 Board)

[Adjustment Object]

To adjust the link of the Ach and Bch of the tape playback outputs. To make the unit compatible with other tapes and units. If this specification is not satisfied, the link will appear on the screen and the screen will be disrupted, etc.

Mode	Playback (SP)
Signal	Alignment tape: MH-2 SP color bar portion
Measurement point	CH1: Video Line out terminal CH2: CN802 pin ③ (RF SWP) (RV-42/43 board)
Measuring instrument	Oscilloscope
Adjustment element	RV592
Specified value	6.5±0.5H (416±32μsec)

[Adjustment Method]

1) Set TRACKING switch (Remote commander) to MANUAL. ("Auto tracking" display will disappear on the display window indicator.)
2) Press the tracking buttons ▼ and ▲ and adjust the tracking position to the center.
3) Adjust to 416±32μsec (6.5±0.5H) using RV592.

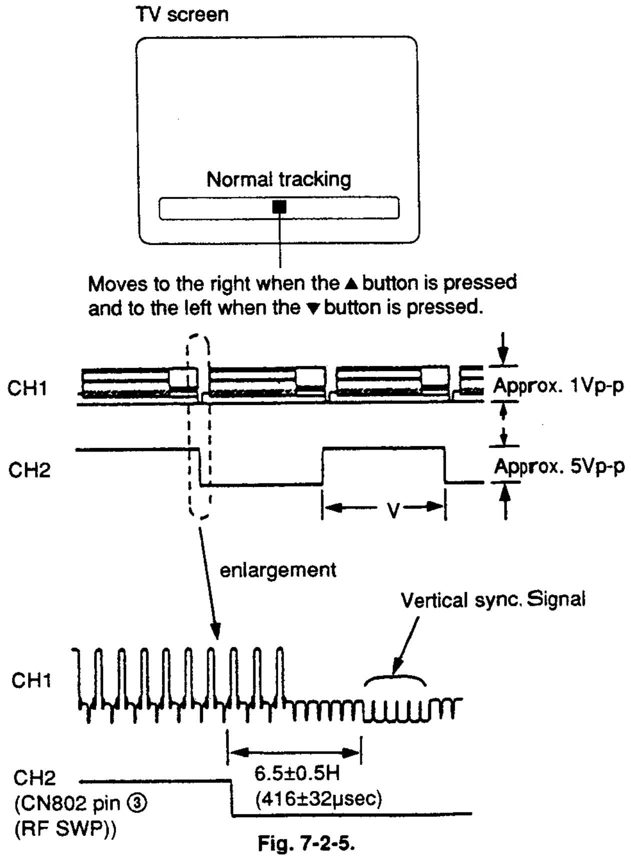

TV screen
Normal tracking
Moves to the right when the ▲ button is pressed and to the left when the ▼ button is pressed.
CH1
Approx. 1Vp-p
CH2
Approx. 5Vp-p
V
enlargement
Vertical sync. Signal
CH1
CH2
(CN802 pin ③
(RF SWP))
6.5±0.5H
(416±32μsec)

Fig. 7-2-5.

2-4. VIDEO SYSTEM ADJUSTMENT

For the video system adjustment, follow the adjustment procedures given below as a rule. The color bar video signal supplied from the pattern generator is used as the video input signal for the video system adjustment of the recording mode. Check that the signal satisfies the specified value designated in the "Check of input signal (Fig. 7-2-4.).

[Adjustment Sequence]

1) X'tal OSC Check
2) SYNC AGC Check
3) White clip/Dark clip check
4) Y FM carrier frequency and level check
5) Playback Y Level check
6) Recording chroma Adjustment
7) Overall Y Level check

2-4-1. X'tal OSC Check (RV-42/43 Board)

Mode	Playback
Signal	Alignment tape: Color bar portion
Measurement point	IC004 pin ⑧
Measuring instrument	Oscilloscope and Frequency counter
Specified value	PAL: 4,433,619±82Hz

Note: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check that the oscillation frequency is 4,433,619±82Hz and that the oscillation voltage is 300±130mVp-p.

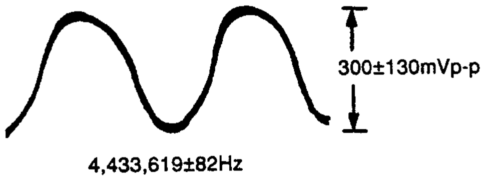


Fig. 7-2-6.

2-4-2. SYNC AGC Check (RV-42/43 board)

Mode	E-E
Signal	Color bar
Measurement point	Video output terminal
Measuring instrument	Oscilloscope
Specified value	A=2.05±0.14Vp-p

[Check Method]

1) Check that the SYNC AGC level (A) satisfies the specified value.

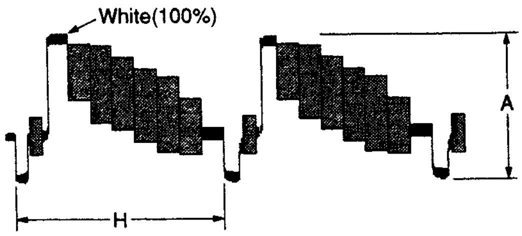


Fig. 7-2-7.

2-4-3. White Clip/Dark Clip Check (RV-42/43 Board)

Mode	E-E
Signal	Color bar
Measurement point	IC001 pin ㊽
Measuring instrument	Oscilloscope
Specified value	White clip : 190±15% (A) Dark clip : 52±10% (B)

[Check Method]

1) Check that the white clip level is 190±15% to the white (100%) level.
2) Check that the dark clip level is 52±10% to the white (100%) level.

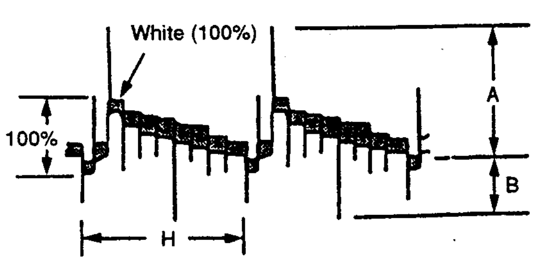


Fig. 7-2-8.

2-4-4. Y FM Carrier Frequency and Level Check (RV-42/43 Board)

Mode	E-E
Signal	No-signal
Measurement point	Q083 Emitter
Measuring instrument	Oscilloscope/Frequency Counter
Specified value	3.80±0.1MHz 550±120mVp-p

Note: A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

[Check Method]

1) Check that the carrier frequency and Rec Y Level satisfies the specified value.

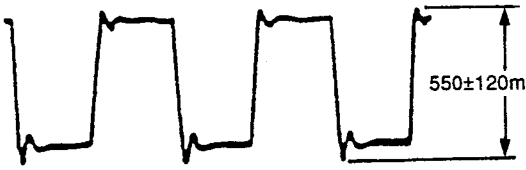


Fig. 7-2-9.

2-4-5. Playback Y Level Check (RV-42/43 Board)

Mode	Playback
Signal	Alignment tape: SP mode color bar portion
Measurement point	Video output terminal
Measuring instrument	Oscilloscope
Specified value	A=2.05±0.18Vp-p

[Check Method]

1) Check that the playback Y level satisfies the specified value.

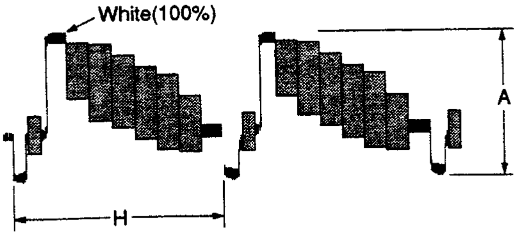


Fig. 7-2-10.

2-4-6. Recording Chroma Adjustment (RV-42/43 Board)

[Purpose]

Adjust recording chroma level.
When it is out of order, S/N ratio of color goes bad, the picture is not colored and second sequence beat appears.

Mode	E-E (SP)
Signal	Color bar
Measurement point	Q076 Emitter
Measuring instrument	Oscilloscope
Adjustment element	RV001
Specified value	140±10mVp-p

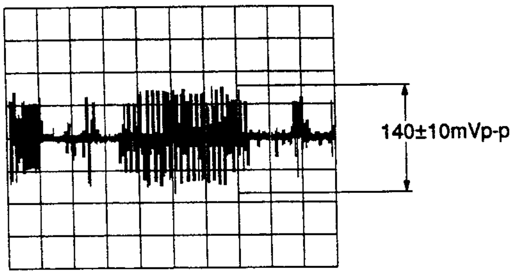


Fig. 7-2-11

[Reference]

Adjusting level is low; Bad color S/N ratio, not colored.
Adjusting level is high; Second sequence beat (squared noise) appears.

2-4-7. Overall Y Level Check

Mode	REC. PB
Signal	Color bar
Measurement point	VIDEO Output terminal
Measuring instrument	Oscilloscope
Specified value	2.0±0.2Vp-p

[Check Method]

1) Feed the color bar signal and record it.
2) Playback the recorded signal and check the signal at VIDEO OUTPUT TERMINAL goes 2.0±0.2Vp-p with oscilloscope.

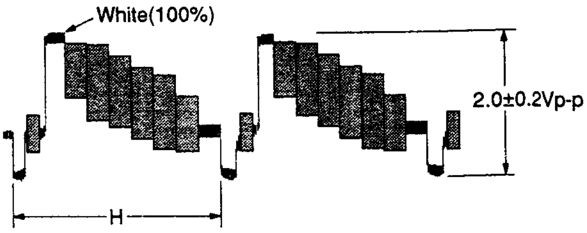


Fig. 7-2-12.

2-5. AUDIO SYSTEM ADJUSTMENTS

- Adjust both Lch and Rch.

[Connection]

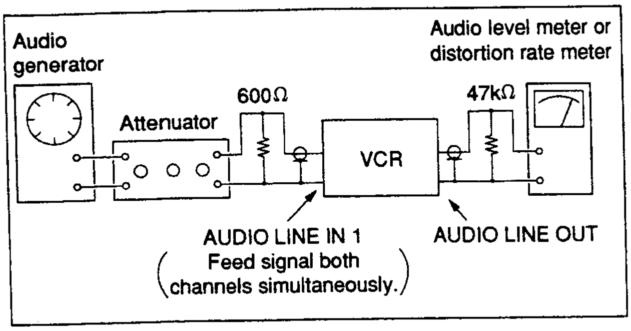

Audio generator
Audio level meter or distortion rate meter
600Ω
47kΩ
Attenuator
VCR
AUDIO LINE IN 1
(Feed signal both channels simultaneously.)
AUDIO LINE OUT

Fig. 7-2-13.

- **Hi-Fi Audio System Adjustment**
- Set switches and knobs to the following positions to make adjustment unless otherwise specified.
  INPUT SELECT switch .... LINE 1
  AUDIO MONITOR switch*1 .... STEREO

*1: Remote commander

[Adjusting Sequence]

1. VCO fo adjustment
2. BPF fo adjustment
3. AF switching position

2-5-1. VCO fo Adjustment (HF-34 Board)

[Purpose]

Adjust to have interchangeability in HiFi audio.
When it is out of order, the sound is distorted.

NTSC mode

Mode	REC
Signal	No signal
Measuring Instrument	Frequency counter
1.3 MHz Adjustment	
Measurement Point	Pin ⑲ of IC101
Adjusting Element	RV103 (L CH)
Specified Value	1.3 MHz ±1 kHz
1.7 MHz Adjustment	
Measurement Point	Pin ㉚ of IC101
Adjusting Element	RV102 (R CH)
Specified Value	1.7 MHz±1 kHz

PAL mode

Mode	REC
Signal	No signal
Measuring Instrument	Frequency counter
1.4 MHz Adjustment	
Measurement Point	Pin ⑲ of IC101
Adjusting Element	RV105 (L CH)
Specified Value	1.4 MHz ±1 kHz
1.8 MHz Adjustment	
Measurement Point	Pin ㉚ of IC101
Adjusting Element	RV104 (R CH)
Specified Value	1.8 MHz±1 kHz

Note: Connect the frequency counter through a probe of high input impedance (more than 1 MΩ) and low capacity (10 pF or less).

[Adjustment Method]

1) Connect the frequency counter to each measurement point.
2) Adjust each volume so that each frequency meets its specified value.

2-5-2. BPF fo Adjustment (HF-34 Board)

[Purpose]

Adjust to separate carrier component precisely and to operate normally the filter for cutting video signal.
When it is out of order, the sound is distorted.

Mode	PB
Signal	1.608 MHz Input 200 mVp-p: Pin ① of CN103
Measurement point	Pin ⑲ of IC101 Pin ㉚ of IC101
Measuring instrument	Oscilloscope
Adjustment element	RV101

[Connection]

1) Remove HF-34 board from CN103, and feed 1.608 MHz, 200 mVp-p sine wave to Pin ① of CN103.

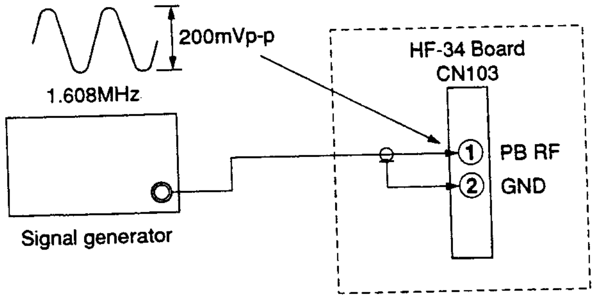

200mVp-p
1.608MHz
HF-34 Board
CN103
① PB RF
② GND
Signal generator

Fig. 7-2-14.

[Adjustment method]

1) Turn RV101 counterclockwise seen from the component side.
2) Turn RV101 clockwise gradually and stop turning when the level Ⓐ becomes equal to the level Ⓑ.

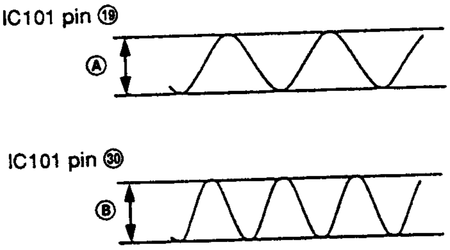

IC101 pin ⑲
Ⓐ
IC101 pin ㉚
Ⓑ

Fig. 7-2-15.

2-5-3. AF Switching Position Adjustment (CV-29/30 Board)

[Adjustment Object]

To adjust the link of the Ach and Bch of the tape playback outputs.
If this specification is not satisfied, the noise will increase and cracking sounds will be produced.

Mode	Playback
Signal	Alignment tape: MH-2 SP color bar portion
Measurement point	CH1: IC101 pin ⑲ (Lch RF) (JL111) (HF-34 board) CH2: CN802 pin ③ (RF SWP) (RV-42/43 board)
Measuring instrument	Oscilloscope
Adjustment element	RV591
Specified value	No dropouts in the RF signal

[Adjustment Method]

1) Set TRACKING switch (Remote commander) to MANUAL. ("Auto tracking" display will disappear on the display window indicator.)
2) Press tracking buttons ▼ and ▲ and adjust the tracking position to the center.
3) Adjust to the minimum specified value using RV591.

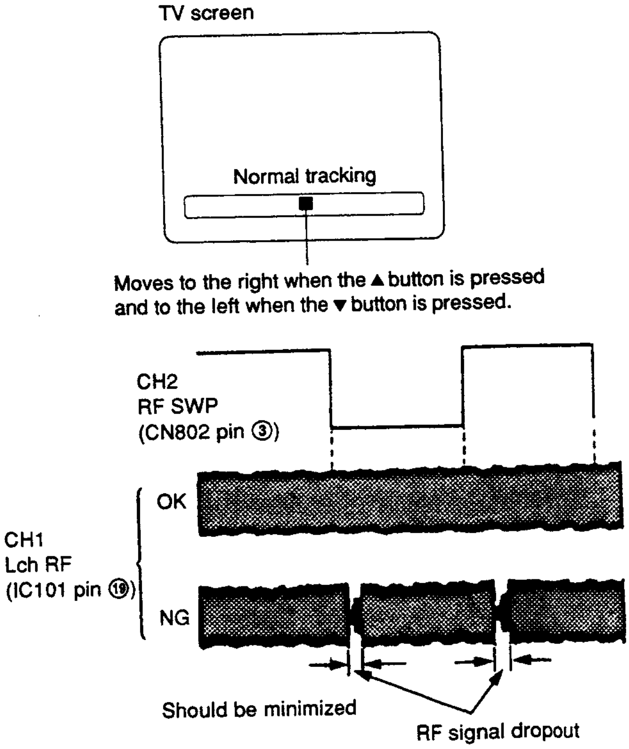

TV screen
Normal tracking
Moves to the right when the ▲ button is pressed and to the left when the ▼ button is pressed.
CH2
RF SWP
(CN802 pin ③)
CH1
Lch RF
(IC101 pin ⑲)
OK
NG
Should be minimized
RF signal dropout

Fig. 7-2-16.

- **Normal Audio System Adjustment**
- Adjust in the SP mode if there is no special indications.
- Perform the adjustment setting the switch on the following position.

INPUT SELECT switch .... LINE 1

AUDIO MONITOR switch*2 .... NORMAL*1

*1: No indicates on the display window indictor and monitor TV.
*2: Remote commander

[Adjustment Method]

1. ACE head adjustment
   (Refer to the VHS mechanical adjustment manual IV)
2. Recording bias adjustment
3. E-E output level check
4. Overall output level and distortion factor check
5. Overall noise level check

2-5-4. ACE Head Adjustment

Refer to the "VHS Mechanical adjustment manual IV" (9-973-623-11).

2-5-5. Recording Bias Adjustment (MA-232/242 Board)

Mode	Self-record playback
Signal	400Hz, -27.5dBs } Audio line in 1 7kHz, -27.5dBs } (L or R)
Measurement point	Audio line out (L or R)
Measuring instrument	Audio level meter
Adjustment element	RV887
Specified value	0±2dBs

[Adjustment Method]

1) Supply a signal of 400Hz, -27.5dBs to Audio Line Input.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio level meter will indicate -27.5dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7kHz and make recording.
6) Playback a recorded portion, and measure output levels at 400Hz and 7kHz.
7) Confirm that the 7kHz playback output levels within a range of the 400Hz playback output level 0±2dB. When it is out of this range, adjust RV887 and repeat the steps 1) through 7) above.

	Direction of Rotating RV887
400Hz level > 7kHz level	Clockwise (↻)
400Hz level < 7kHz level	Counterclockwise (↺)

2-5-6. E-E Output Level Check (MA-232/242 Board)

Mode	E-E
Signal	400Hz, -7.5dBs: Audio Line in 1
Measurement point	Audio line output terminal
Measuring instrument	Audio level meter
Specified value	-7.5±2dBs

[Checking Method]

1) Input signal of 400Hz and -7.5dBs to the L and R channel o the audio input at the same time
2) Check that the audio output level is -7.5±2dBs.

2-5-7. Overall Output Level and Distortion Facto Check (MA-232/242 board)

Mode	Self-record playback
Signal	400Hz, -7.5dBs: Audio Line Input 1 terminals, left and right
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter and Distortion meter
Specified value	Playback Level: -7.5±3dBs Distortion: 4.0% or less

[Check Method]

1) Record signal.
2) Playback the recorded portion.
3) Check that the output level is -7.5±3dBs.
4) Check that the distortion factor is 4.0% of less on the left an right side.

2-5-8. Overall Noise Level Check (MA-232/242 Board)

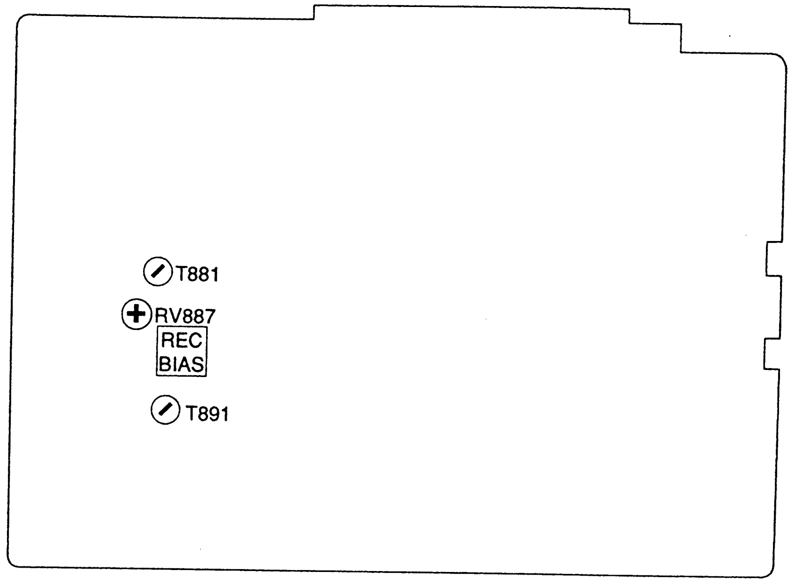
Mode	Self-record playback
Signal	No signal (Insert a shorting plug into the Audio Line Input jacks, left and right.)
Measurement point	Audio Line Output terminals, left and right
Measuring instrument	Audio level meter
Specified value	Less than -46dBs

[Checking Method]

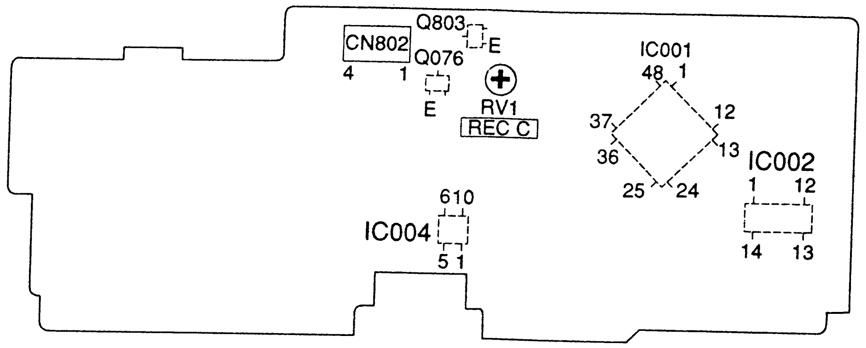
1) Record.
2) Playback recorded portion.
3) Check that noise level is -46dBs or less on the left side an right side.

2-6. ADJUSTMENT PARTS LOCATION DIAGRAM

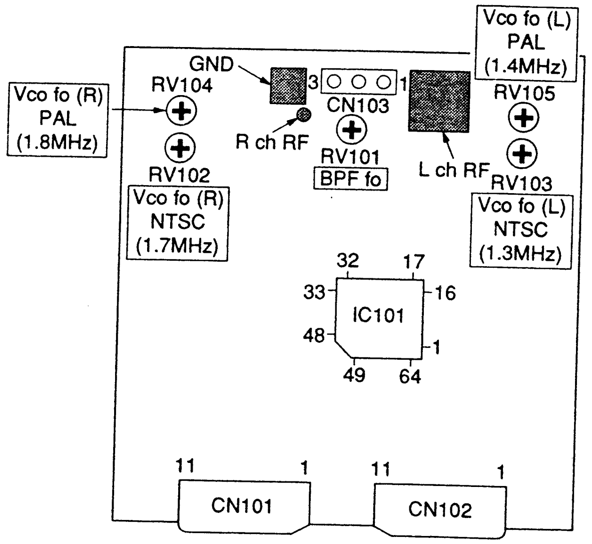
MA-232/242 BOARD (COMPONENT SIDE)


T881
RV887
REC BIAS
T891

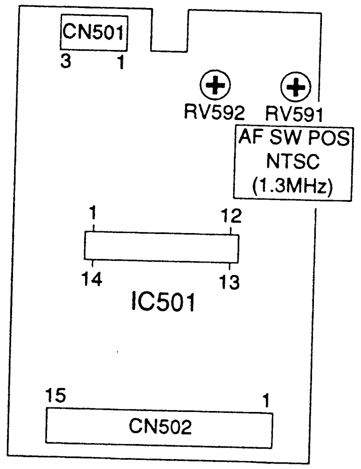
RV-42/43 BOARD (COMPONENT SIDE)


CN802
4 1
Q803
E
Q076
E
RV1
REC C
IC001
48 1
37 12
36 13
25 24
IC002
1 12
14 13
IC004
6 10
5 1

HF-34 BOARD (COMPONENT SIDE)


Vco fo (R) PAL (1.8MHz)
GND
RV104
RV102
Vco fo (R) NTSC (1.7MHz)
3 1
CN103
R ch RF
RV101
BPF fo
L ch RF
Vco fo (L) PAL (1.4MHz)
RV105
RV103
Vco fo (L) NTSC (1.3MHz)
32 17
33 16
IC101
48 1
49 64
11 1
CN101
11 1
CN102

CV-29/30 BOARD (COMPONENT SIDE)


CN501
3 1
RV592
RV591
AF SW POS NTSC (1.3MHz)
1 12
14 13
IC501
15 1
CN502

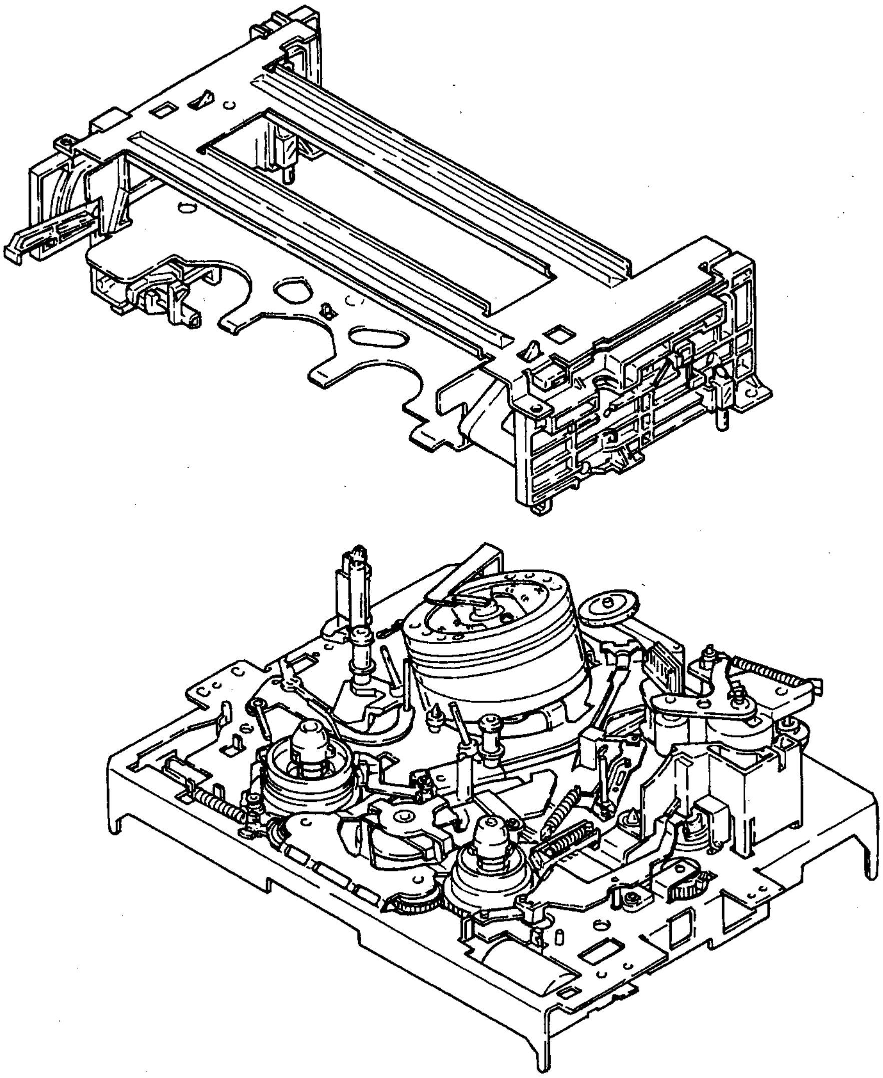
* Part on the conductor side.

VHS MECHANICAL ADJUSTMENT MANUAL IV

V03056

H MECHANISM

Please use with the service manual.



VHS VIDEO CASSETTE RECORDER

SONY®

MICROFILM

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4. ADJUSTMENT

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1. PREPARATION FOR MECHANISM CHECK ADJUSTMENT AND REPLACEMENT

Refer to the service manual, "DISASSEMBLY" for removal of the cabinet and boards.

1-1. LOADING AND THREADING PROCEDURE WHEN THE POWER TURNS OFF (Fig. 1-1)

1-1-1. LOADING AND THREADING PROCEDURE WITH HANDS

1) Turn cam motor in the arrow Ⓐ direction until loading and threading are end.

1-1-2. LOADING AND THREADING PROCEDURE WITH REGULATED DC POWER SUPPLY

1) Applying approx. +9 V (300 mA) to cam motor with regulated DC power supply makes it loading and threading.

Note: When loading and threading without cassette, claws are caught in four positions as following figure (in the order① → ② → ③ → ④).
So release them with hands.

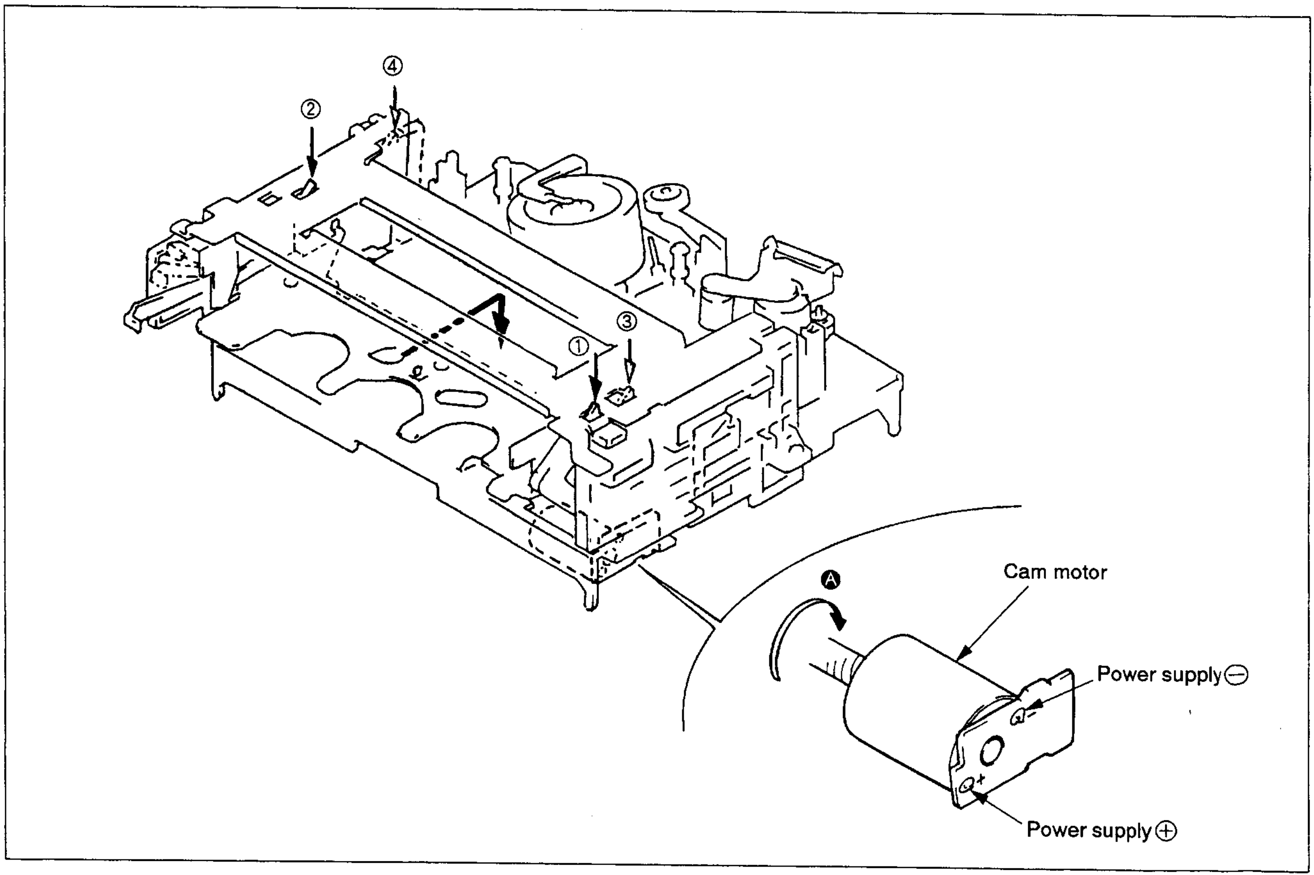


Fig. 1-1

1-2. UNLOADING AND UNTHREADING PROCEDURE WHEN THE POWER TURNS OFF (Figs. 1-2 and 1-3)

1-2-1. UNLOADING AND UNTHREADING PROCEDURE WITH HANDS

1) Turn cam motor in the arrow Ⓑ direction until unthreading is end.
2) Turn capstan motor in the arrow Ⓒ direction to take up tape in cassette.
3) Turn cam motor in the arrow Ⓑ direction until unloading is end.

1-2-2. UNLOADING AND UNTHREADING PROCEDURE WITH REGULATED DC POWER SUPPLY

1) Apply approx. +9 V (300 mA) to contrary polarities of cam motor.
2) Unthreading operation begins, tape guides return to their original positions (Unthreading operation is end but tape remains), then stop cam motor by turning power off.

Note: When unloading begins and cassette lid is closed, turn cam motor in the arrow Ⓐ direction to open tape guard.

3) Turn capstan motor in the arrow Ⓒ direction to take up tape in cassette.

Note: That tape is not caught at pinch roller. (Fig. 1-3)

4) Check that tape is not loosened completely, and apply approx. +9 V (300 mA) to contrary polarities of cam motor with regulated DC power supply. (Fig. 1-2)

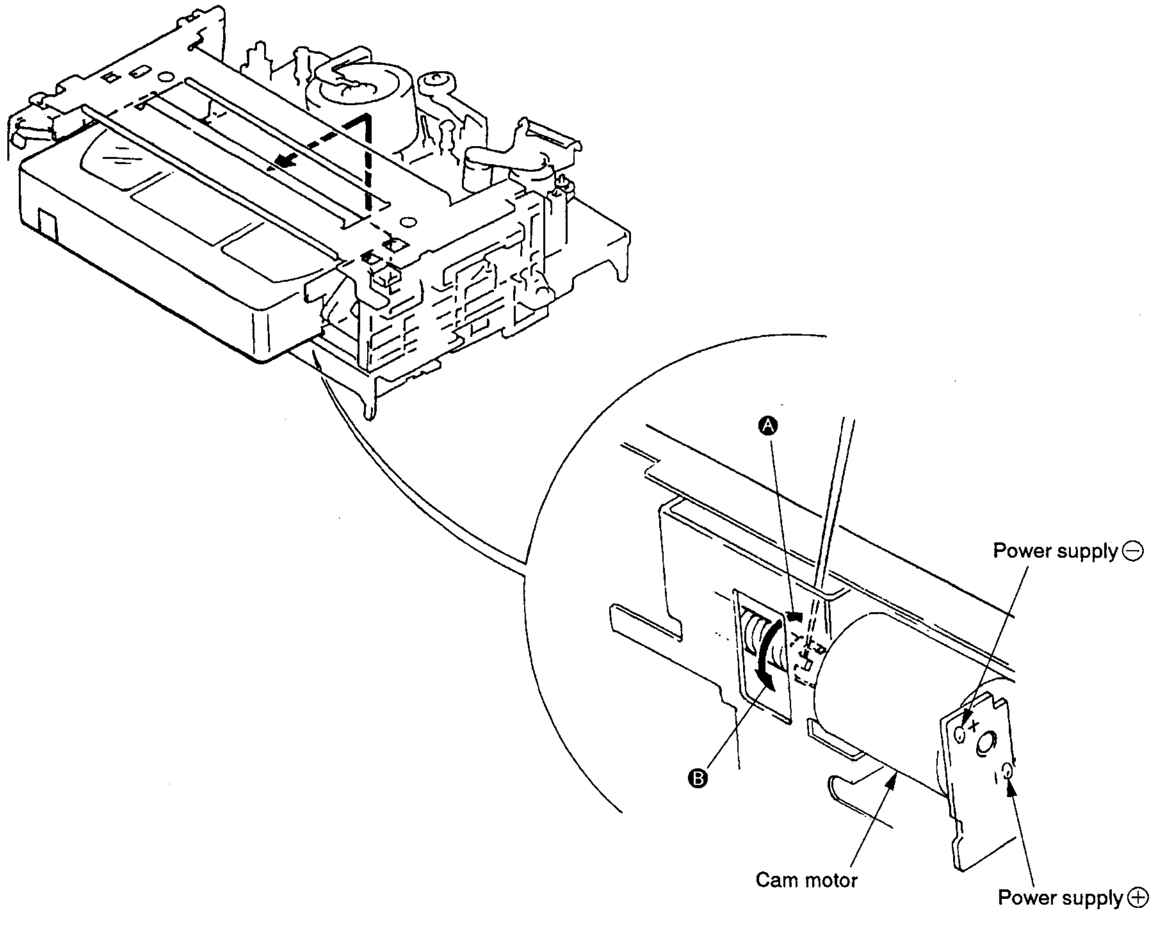


Fig. 1-2

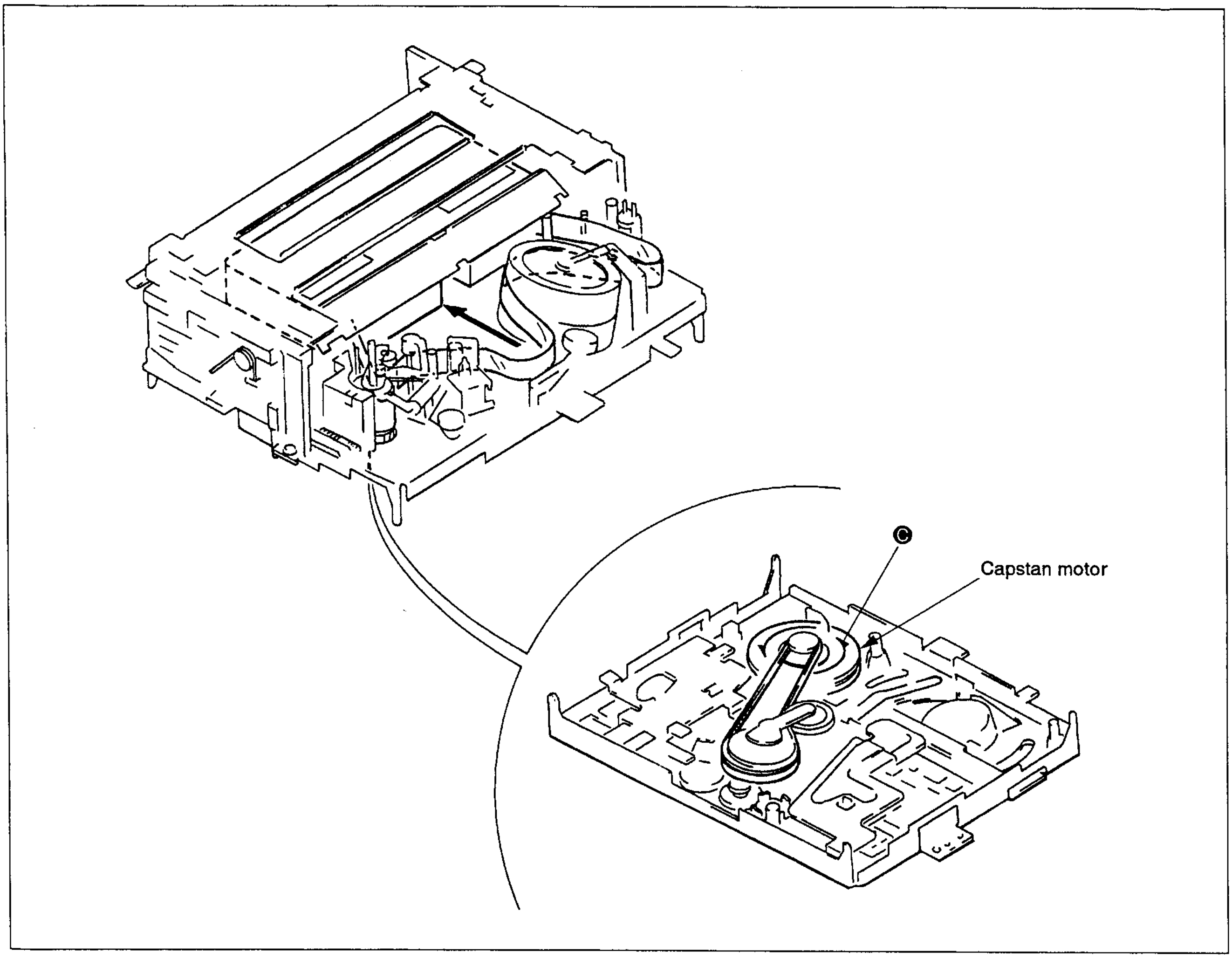

Ⓒ
Capstan motor

Fig. 1-3

1-3. HOW TO COMPLETE THREADING WITHOUT CASSETTE COMPARTMENT (Fig. 1-4)

Note 1: Put the FL block assembly removed the FL top plate on the bottom not to put dust or grease the top sensor and the end sensor luminous plates or not to scratch them. (Fig. A)

1) Pull out AC plug from wall outlet.
2) Shade near the end and top sensors with a black masking tape on the like.
3) Press cassette in/rec proof switch with a tip of screwdriver or the like.
4) Connect AC plug to wall outlet.
5) Release cassette in/rec proof switch by putting off a tip of screwdriver or the like.
   (At this time, power turns on, rewind operates for 10 seconds, after that power turns off.)

Note 2: In this condition, each mode can be set to video cassette recorder. (including recording mode)
However, fast forward should be done after rewinding for 15 seconds or more.

Note 3: After above mentioned operation, be sure to return the mode in the following order.

1) Remove the tape near the end and top sensors.
2) Pull out AC plug from wall outlet to reset the system control microcomputer.

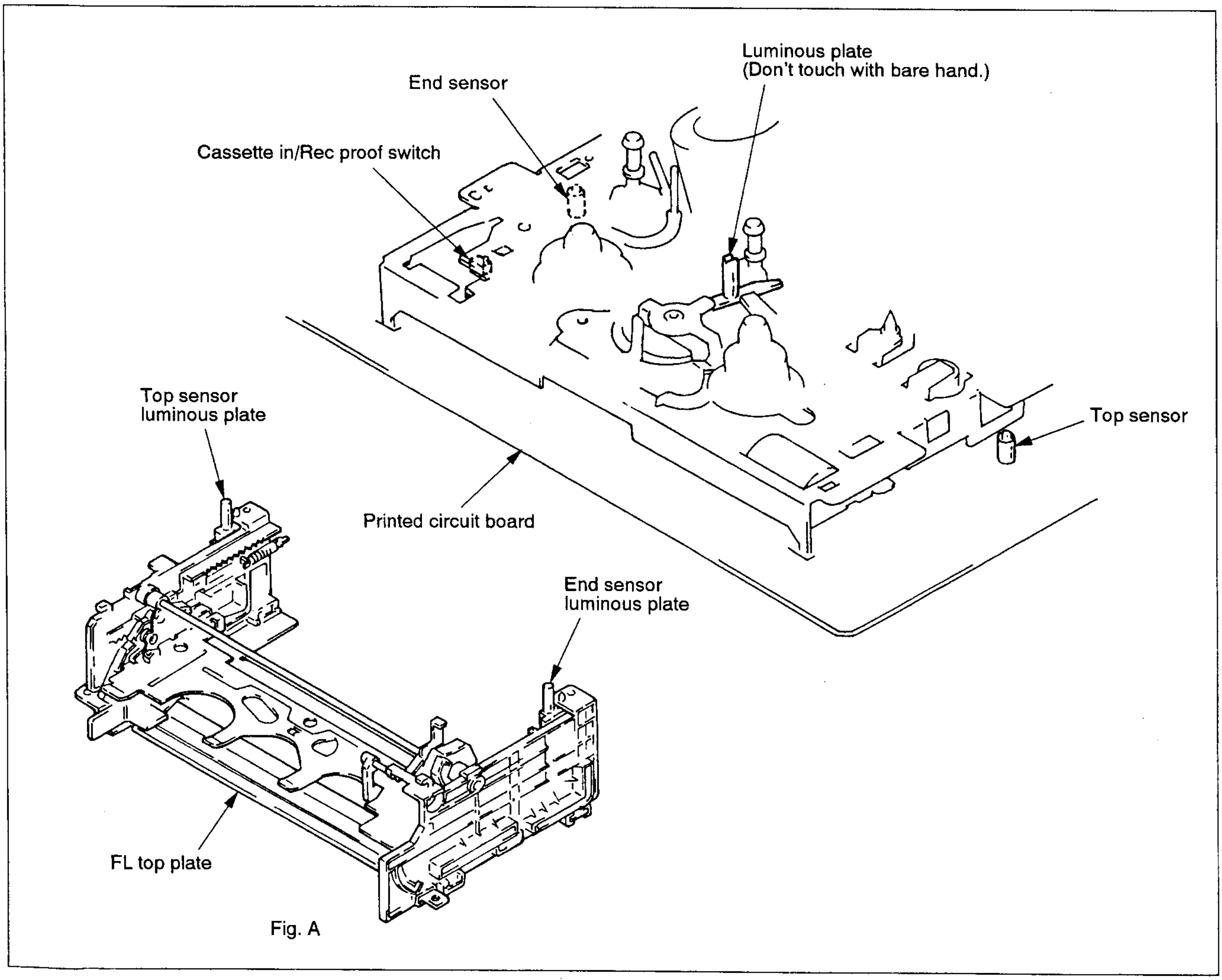

Luminous plate
(Don't touch with bare hand.)
End sensor
Cassette in/Rec proof switch
Top sensor luminous plate
Top sensor
Printed circuit board
End sensor luminous plate
FL top plate
Fig. A

Fig. 1-4

2. PERIODIC CHECK AND REPLACEMENT

In order to obtain the best performance from this unit and make full use of its capabilities, and to extend the life of the unit and tapes, it is recommended that the following periodic checks and maintenance be performed.

* The following must be done after every repair regardless of how many hours the user has operated the machine.

2-1. CLEANING OF ROTATING HEAD DISK ASSEMBLY

1) Press a chamois cloth (Jig Ref. No. J-9) which has been dipped in cleaning fluid (Jig Ref. No. J-8) lightly against the rotating drum assembly, then do the cleaning by slowly rotating the rotating head disk by hand. (Never try to clean by using the motor to turn it.)
2) Never try to clean by moving the chamois cloth at a vertical angle to the head tip. There is a very great danger of damaging the head tip if this is done.

2-2. CLEANING OF THE TAPE MOVEMENT SYSTEM

1) Clean the surfaces which the tape contacts during its movement (tape guide, drum assembly surface, capstan, pinch roller, etc.) with a chamois cloth that has been dipped in cleaning fluid.

2-3. CLEANING THE DRIVE SYSTEM

1) Clean the driving parts with a cloth that been dipped in cleaning fluid.

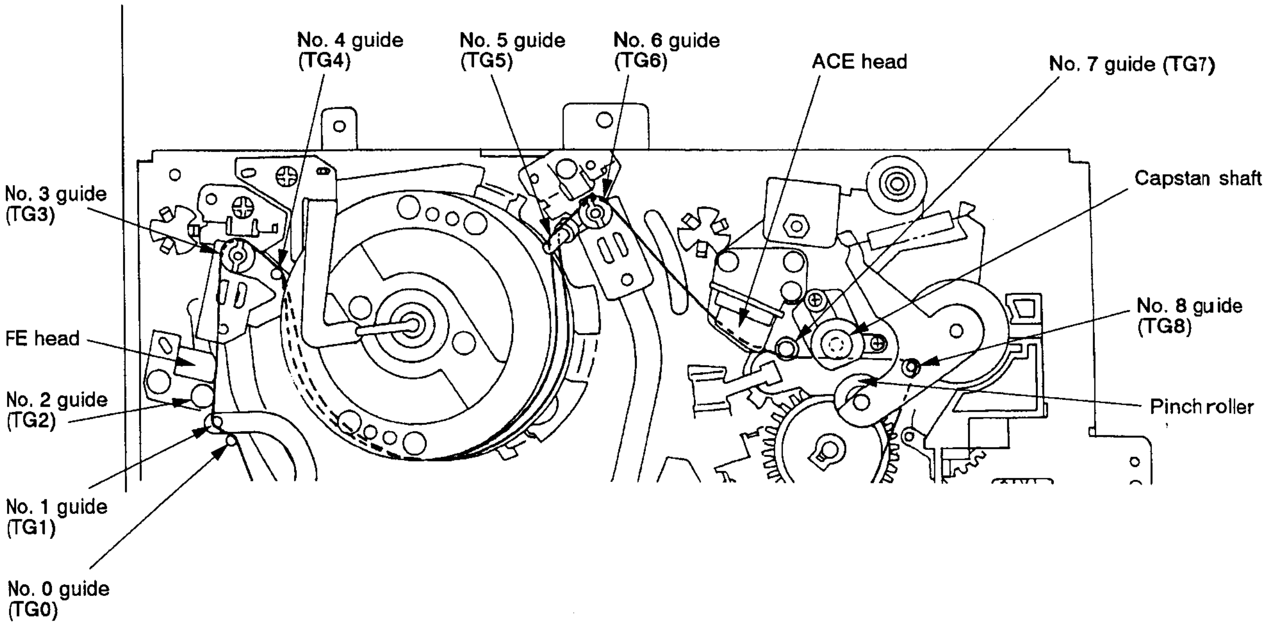

No. 4 guide (TG4)
No. 5 guide (TG5)
No. 6 guide (TG6)
ACE head
No. 7 guide (TG7)
Capstan shaft
No. 3 guide (TG3)
FE head
No. 2 guide (TG2)
No. 1 guide (TG1)
No. 0 guide (TG0)
No. 8 guide (TG8)
Pinch roller

Fig. 2-1 Parts requiring cleaning

2-4. PERIODIC CHECK ITEMS

Perform the maintenance and check listed on the table below, according to users operating hours.

Operating Hours (H) / Maintenance & Check		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
Tape Transportation System	Cleaning of tape transportation system	○	○	○	○	○	○	○	○	○	○	This cleaning must be done whenever a repair is made.
	Cleaning and degaussing of ACE assembly	○	○	○	○	○	○	○	○	○	○	
	Cleaning & degaussing of upper drum assembly	○	○	○	○	○	○	○	○	○	○	The life of the head varies, depending on operational conditions and method.
Performance Confirmation	Abnormal sound	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace the section which causes abnormal sound.
	Measurement of FWD back tension	–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to 4-1-1. Specified value: adjust to 36 to 44 g•cm (when measured with torque cassette tape)
	Confirmation of brake system	–	☆	–	☆	–	☆	–	☆	–	☆	Confirmation must be made according to section.
	Confirmation of record & playback functions	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Perform the confirmation whenever repair is made.
	Measurement of forward torque	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust to 70 to 120 g•cm

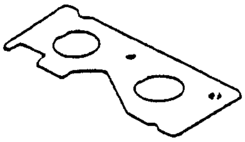
○ Cleaning ☆ Confirmation

Note: On overhaul
When overhauling the unit, replace parts as indicated in the above table.

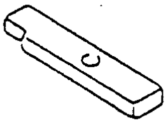
2-5. TOOLS AND FIXTURES REQUIRED FOR SERVICING

Ref No.	Name	Part No.	Carved Jig No.	Remarks
J-1	Master Plane	H-7099-279-H		Applicable to S-VHS
J-2	Reel Disk Height Jig	H-7099-038-H		
J-3	Torque Gauge Adaptor	H-7099-035-H		
J-4	0.93 mm Torque Gauge	H-7099-039-H		
J-5	Hex. Wrench	H-7099-202-H		
J-6	Torque Measurement Cassette VHT-063S	J-6082-011-A		For FWD & back tension torque measurement.
	Torque Measurement Cassette VHT-404S	J-6082-012-A		For CUE and review torque measurement.
J-7	Alignment Tape JVC-MH-1 (NTSC) 24HASF-2 (NTSC Hi-Fi) JVC-MH-2 (PAL) JVC-MH-4 (SECAM)	 H-7099-046-H H-7099-153-H H-7099-052-H H-7099-053-H		
J-8	Cleaning Fluid	Y-2031-001-0	—	
J-9	Chamois Leather	2-034-697-00	—	
J-10	Head Demagnetizer	Widely available	—	Demagnetize video heads and audio heads.
J-11	Dental Mirror (With handle) Dental Mirror (Mirror)	J-6080-029-A J-6080-030-1	SL-5052	Tape path and tape traveling adjustments or checks.
J-12	FLOIL SG-055G	7-651-000-09		
J-13	Diamond Oil NT-68	7-661-018-18		
J-14	Screw Lock G (1401B)	7-432-114-11		

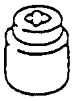
J-1



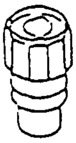
J-2



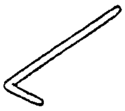
J-3



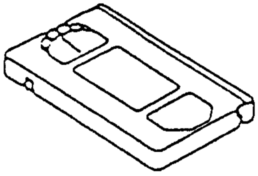
J-4



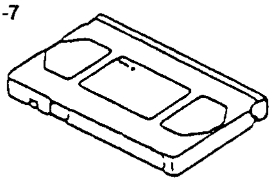
J-5



J-6

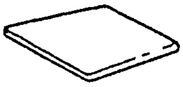


J-7

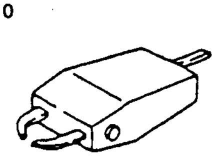


J-8

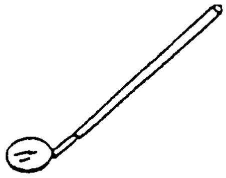
J-9



J-10



J-11



J-12

7-651-000-09
SG-055G

J-13

J-14

3. MAINLY MECHANICAL PARTS REPLACEMENT

Notes:

- Refer to the service manual, "DISASSEMBLY" for removal of the cabinet and boards.
- On mounting, while referring to notes on mounting perform reversely in the removal order.
- When replacing greased parts, grease them in the same way.
- Do not oil, grease or touch with bare hands the surfaces contacts tape of guides and brake shoes.
- Install gears to engage each other.
- Basically, disassembling and assembling should be done in the unthreading-end condition.

3-1. FL BLOCK ASSEMBLY (Fig. 3-1)

1) Remove screws ①.
2) Remove FL block assembly ② in the arrow Ⓐ direction.

Note: Be careful not to damage claws on the bottom and front.

[Note on Mounting]

- First insert claws on the bottom and front not to damage.
- Engage FL slide plate to FL driving gear with slightly sliding FL slide plate. (Fig. A)
- Keep clean top sensor and end sensor luminous plates. (Refer to 1-3.)

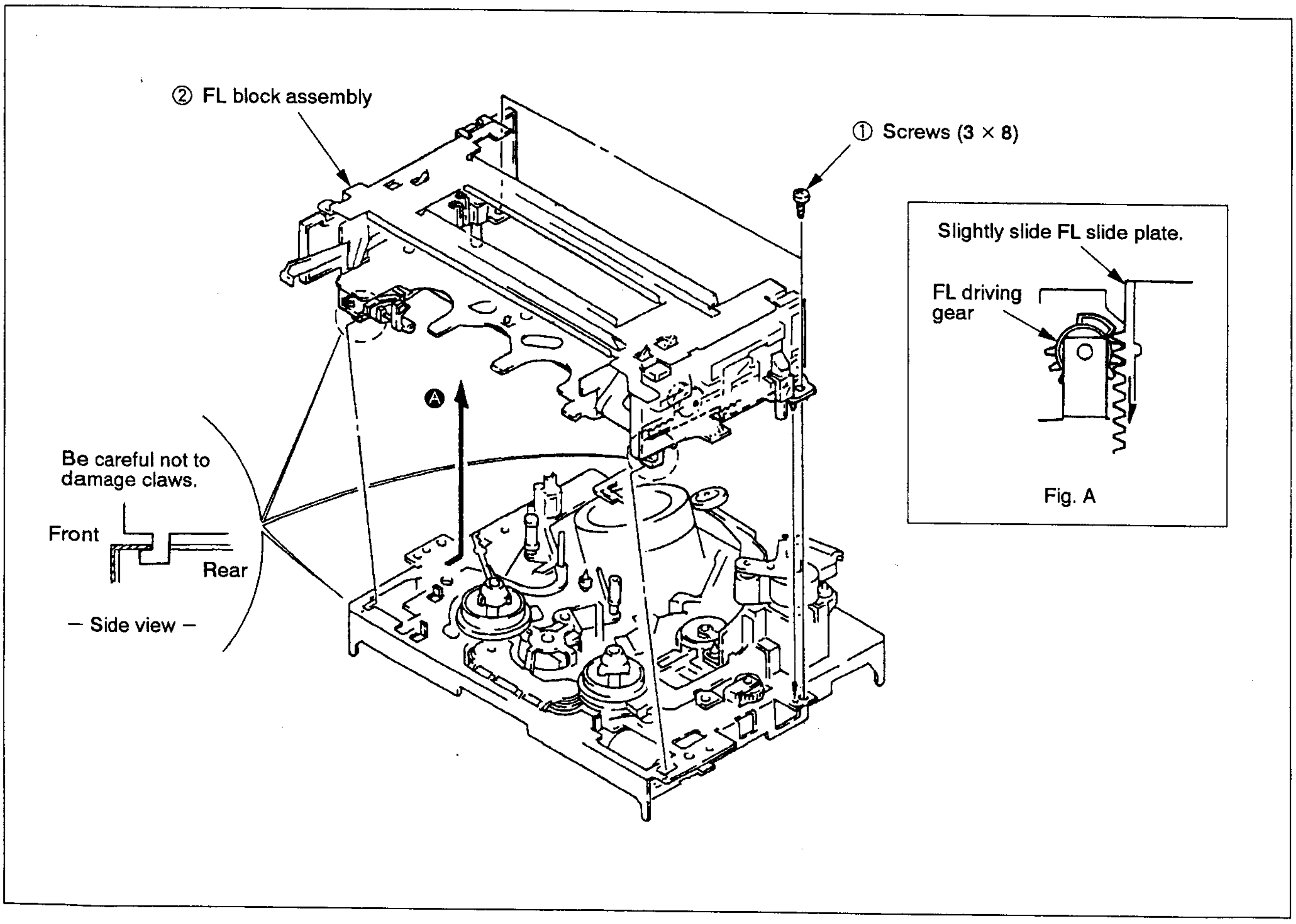

② FL block assembly
① Screws (3 × 8)
Ⓐ
Slightly slide FL slide plate.
FL driving gear
Fig. A
Be careful not to damage claws.
Front
Rear
– Side view –

Fig. 3-1

3-2. DRUM ASSEMBLY (Fig. 3-2)

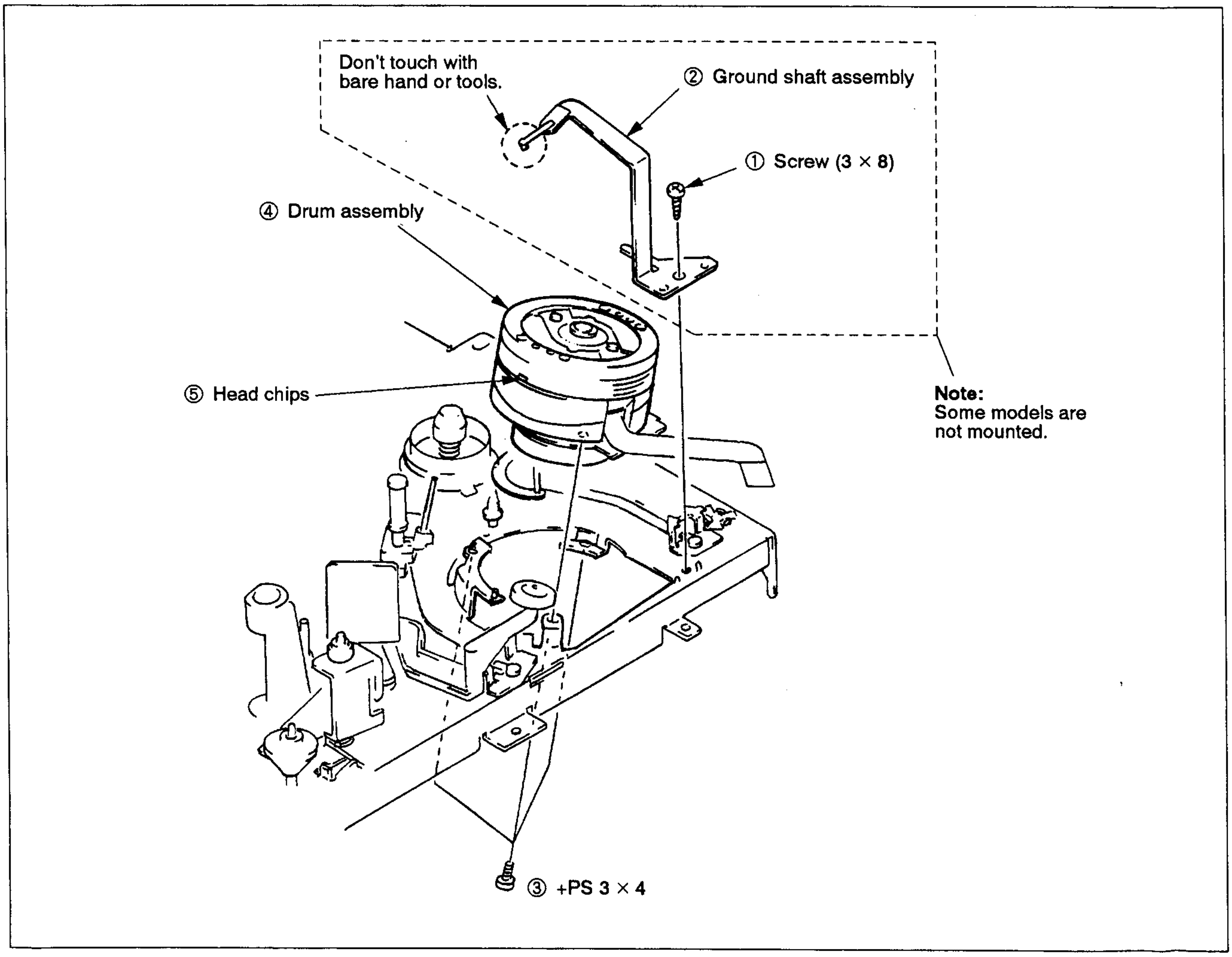
1) Remove screw ①.
2) Remove ground shaft assembly ② not to touch its tip with bare hand or tools.
3) Remove screws ③ to remove drum assembly ④.

[Note on Mounting]

- Don't touch head chips ⑤ and ground shaft assembly ④ with bare hand or tools.
- Keep clean the surface contacts tape of drum assembly ④.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.


Don't touch with bare hand or tools.
② Ground shaft assembly
① Screw (3 × 8)
④ Drum assembly
⑤ Head chips
③ +PS 3 × 4

Note:
Some models are not mounted.

Fig. 3-2

3-3. TIMING BELT (Fig. 3-3)

1) Remove screw ① to remove tension vehicle arm assembly ②.
2) Remove timing belt ③.

[Note on Mounting]

- Tighten screw ① while pressing tension vehicle arm in the arrow Ⓐ direction.

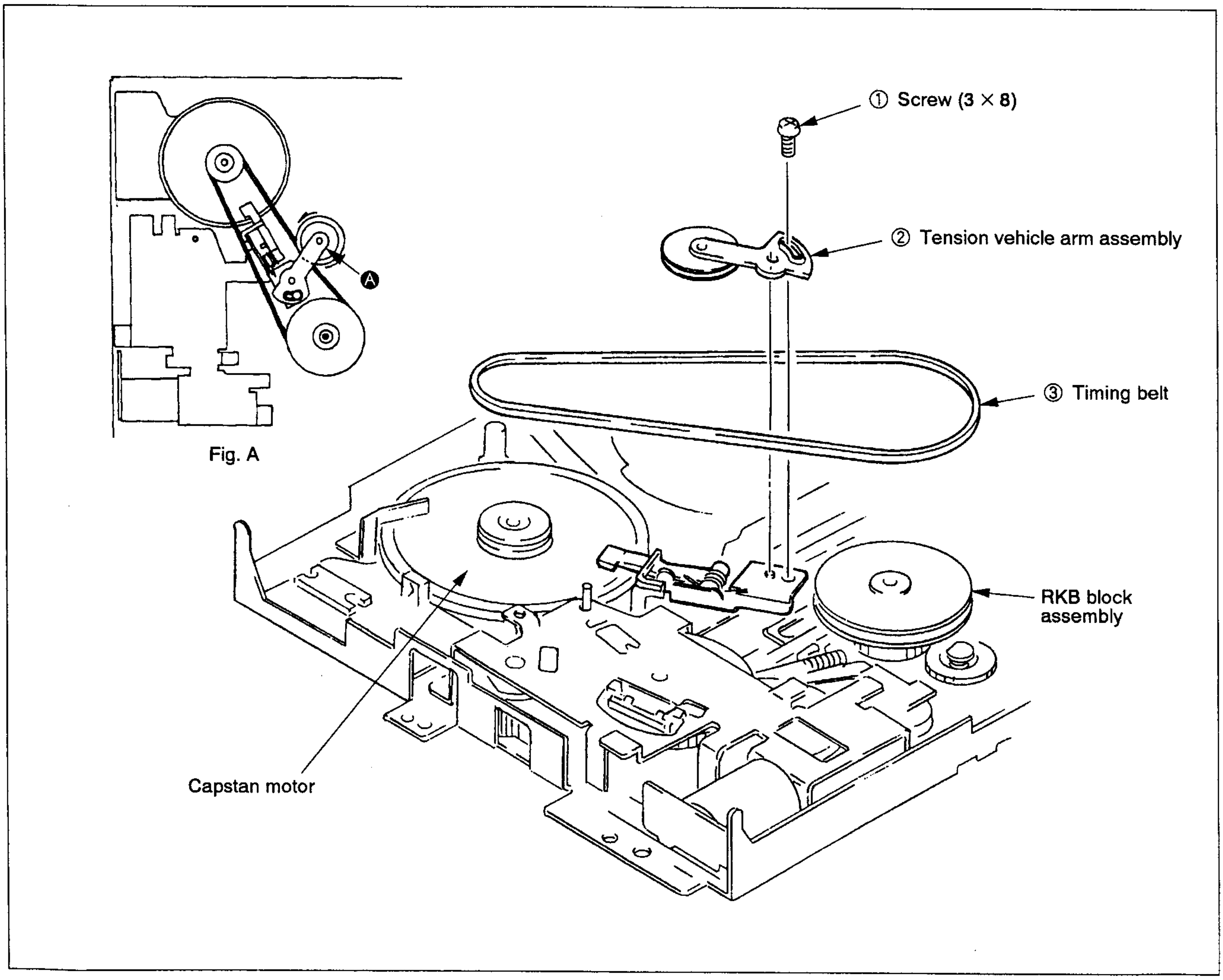


Fig. A
Ⓐ
① Screw (3 × 8)
② Tension vehicle arm assembly
③ Timing belt
RKB block assembly
Capstan motor

Fig. 3-3

3-4. CAP BRAKE ASSEMBLY (Fig. 3-4)

1) Remove tension vehicle arm assembly. (Refer to 3-3)
2) Remove torsion coil spring ① from portion Ⓐ to remove CAP brake assembly.

[Note on Mounting]

- Mount torsion coil spring ① to CAP brake assembly ② in the order Ⓐ and Ⓑ. (Fig. A)
- Put the fulcrum of CAP brake assembly ② to CAP brake shaft ③ and the tip of torsion coil spring to Ⓒ.
- Don't touch brake shoe Ⓓ with bare hand.

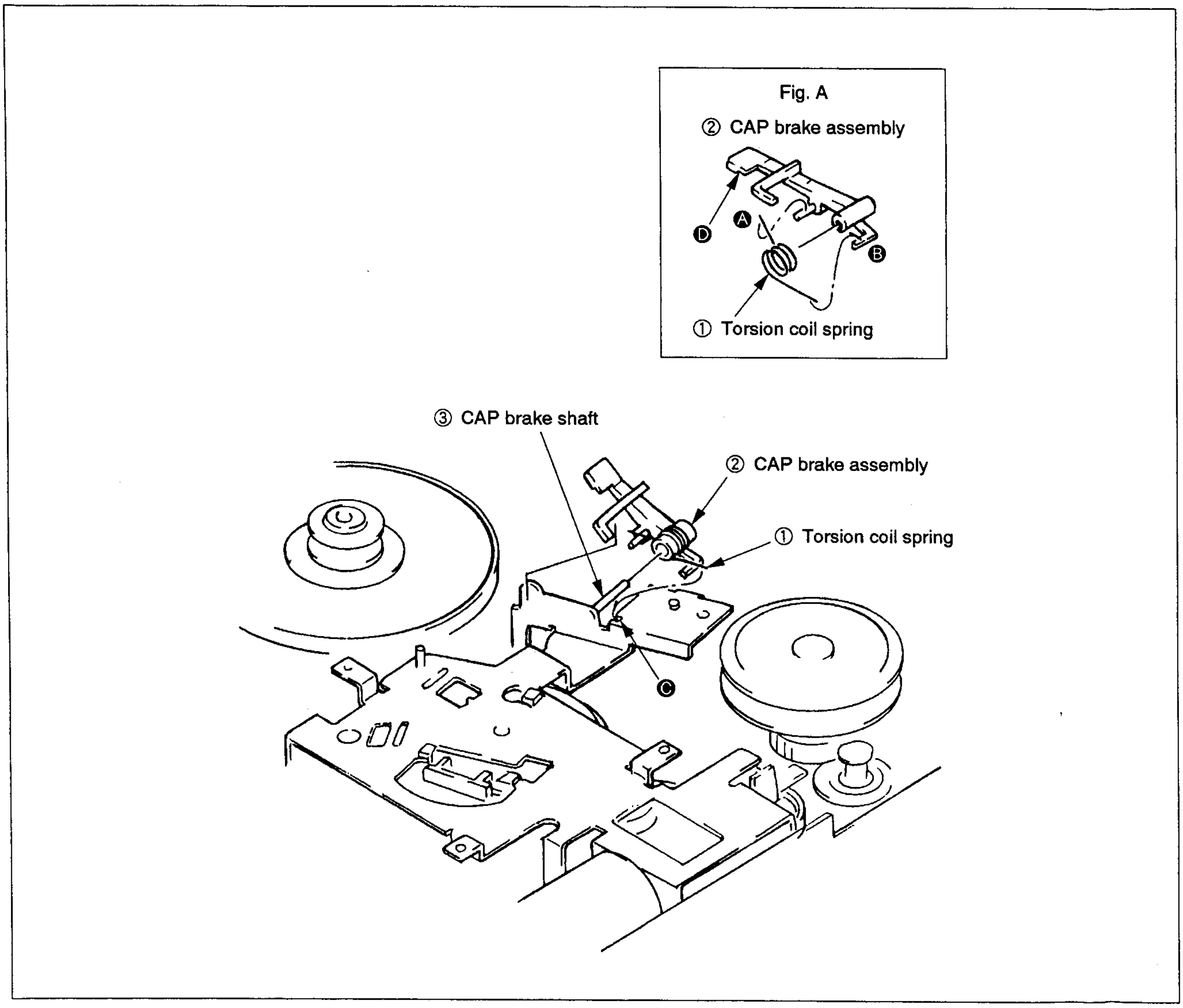


Fig. A
② CAP brake assembly
Ⓓ
Ⓐ
Ⓑ
① Torsion coil spring
③ CAP brake shaft
② CAP brake assembly
① Torsion coil spring
Ⓒ

Fig. 3-4

3-5. TG2 ROLLER, FE HEAD ASSEMBLY (Fig. 3-5)

1) Remove claw Ⓐ to pull out TG2 roller ①.
2) Remove screw ② to pull out FE head assembly.

[Note on Mounting]

- Keep clean the surface contacts tape of TG2 roller ①.

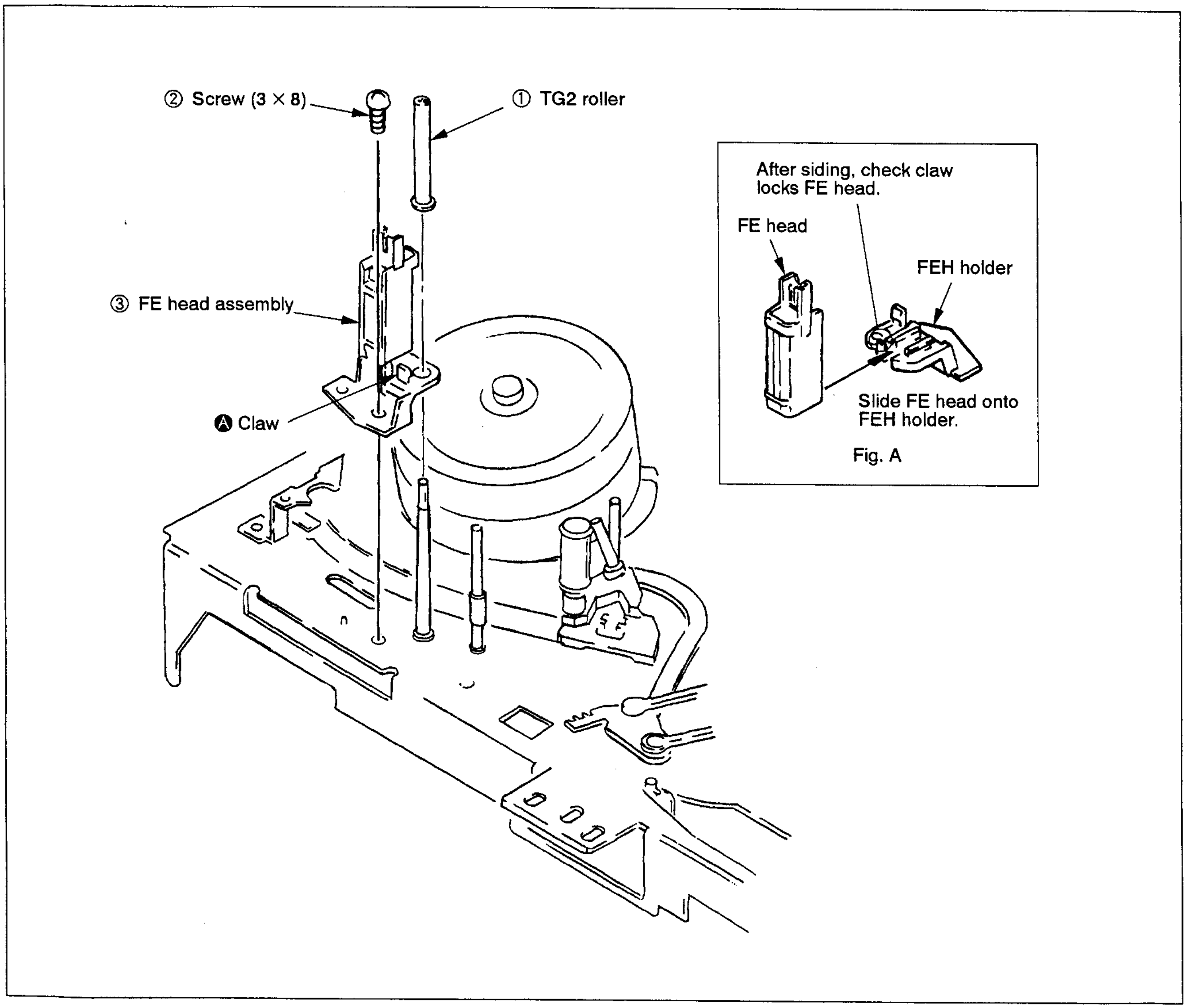

② Screw (3 × 8)
① TG2 roller
③ FE head assembly
Ⓐ Claw
After siding, check claw locks FE head.
FE head
FEH holder
Slide FE head onto FEH holder.
Fig. A

Fig. 3-5

3-6. PINCH PRESS BLOCK ASSEMBLY, ELEVATOR GEAR (Fig. 3-6)

1) Remove E ring ① to pull out pinch press block assembly ②.
2) Remove lid opener ③ by pressing claw Ⓐ in the arrow Ⓑ direction.
3) Pull out elevator gear ④.

[Note on Mounting]

- Apply grease FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions.
- Be sure to match the phase Ⓒ between elevator gear ④ and press gear ⑤ on mounting elevator gear ④.

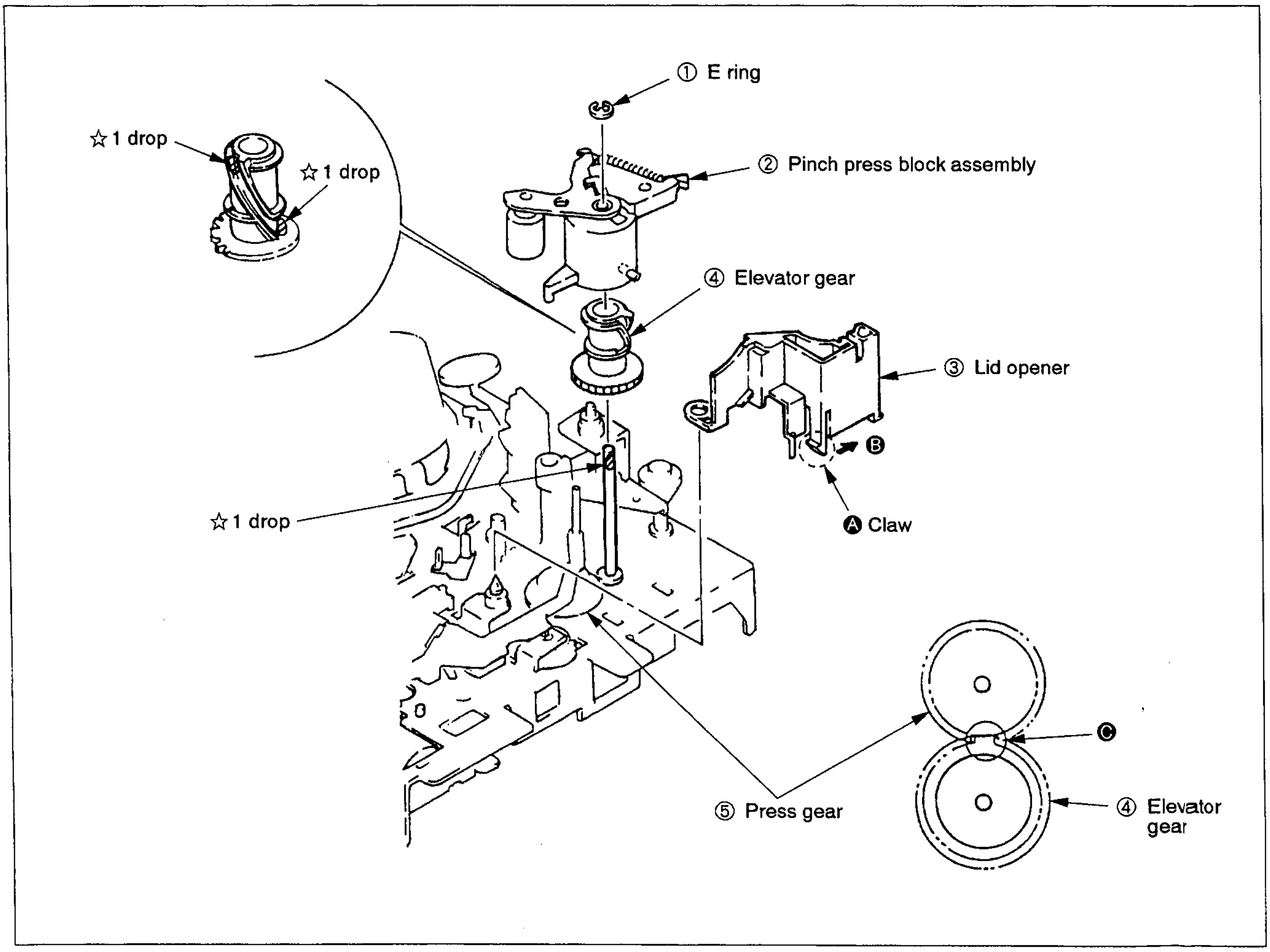

① E ring
☆1 drop
☆1 drop
② Pinch press block assembly
④ Elevator gear
③ Lid opener
Ⓑ
Ⓐ Claw
☆1 drop
Ⓒ
⑤ Press gear
④ Elevator gear

Fig. 3-6

3-7. ACE BLOCK ASSEMBLY (Fig. 3-7)

1) Move torsion coil spring (ACE) ① in the arrow Ⓐ direction.
2) Remove ACE adjustment screw ②.
3) Remove AC height adjustment nut ③ to pull out ACE block assembly ④.

[Note on Mounting]

- Keep clean the surface contacts tape of ACE block assembly ④.
- Be sure to hang torsion coil spring (ACE) ① in the arrow Ⓑ direction.
- Set ACE adjustment screw ② to the height as shown in Fig. A.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.
- After adjustment apply Screw Lock G (1401B) (Jig Ref. No. J-14) at ☆ marked portion.

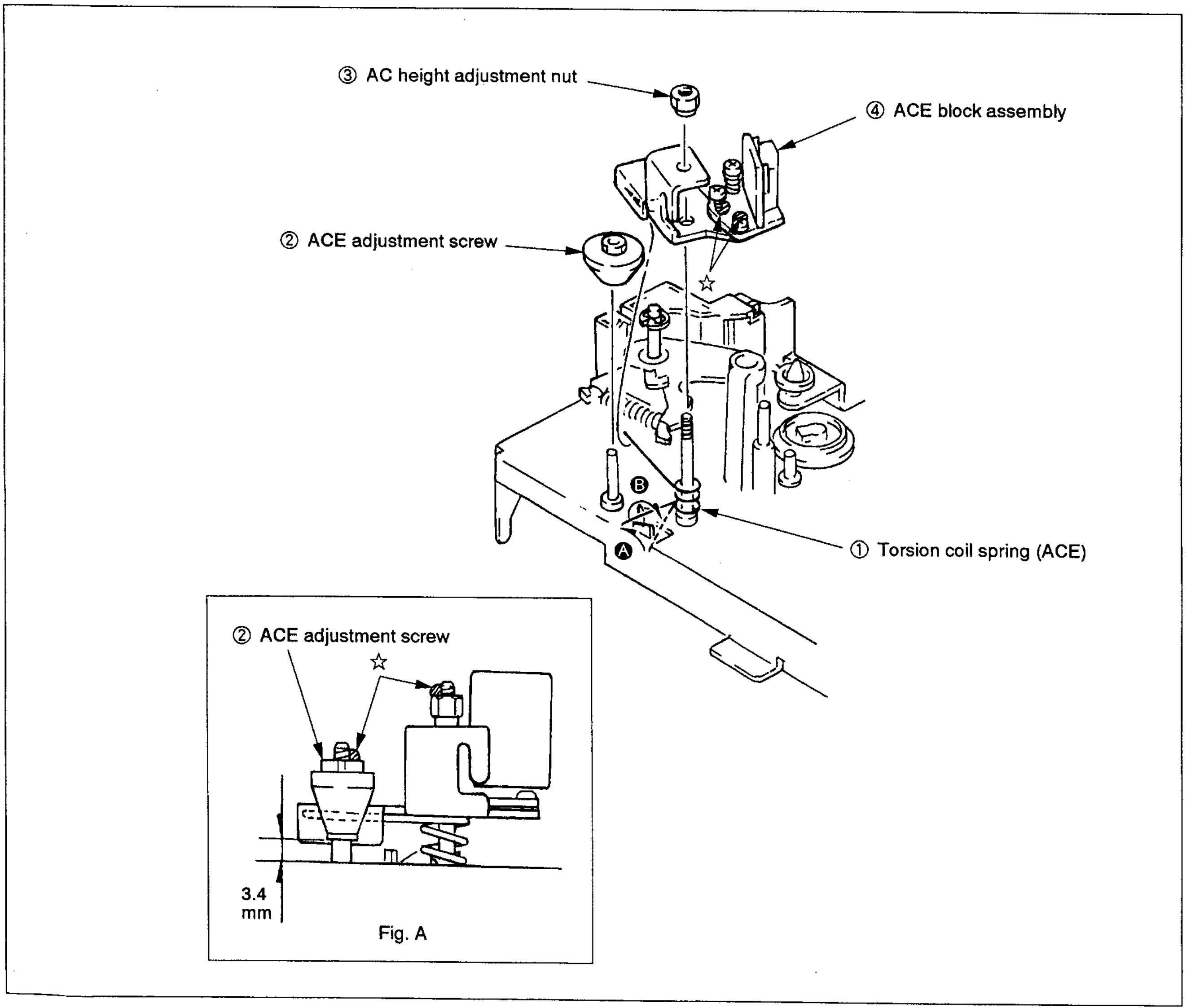

③ AC height adjustment nut
④ ACE block assembly
② ACE adjustment screw
☆
Ⓑ
Ⓐ
① Torsion coil spring (ACE)
② ACE adjustment screw
☆
3.4 mm
Fig. A

Fig. 3-7

3-8. TG3, TG6 GUIDE ROLLER ASSEMBLIES (Fig. 3-8)

1) Loosen screw ① and pull out. TG3 guide roller assembly ② by turning it in the arrow Ⓐ direction.
2) Loosen screw ③ and pull out TG6 guide roller assembly ④ by turning it in the arrow Ⓑ direction.

[Note on Mounting]

- Keep clean the surface contacts tape of TG3 and TG6 guide roller assemblies ②, ④.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

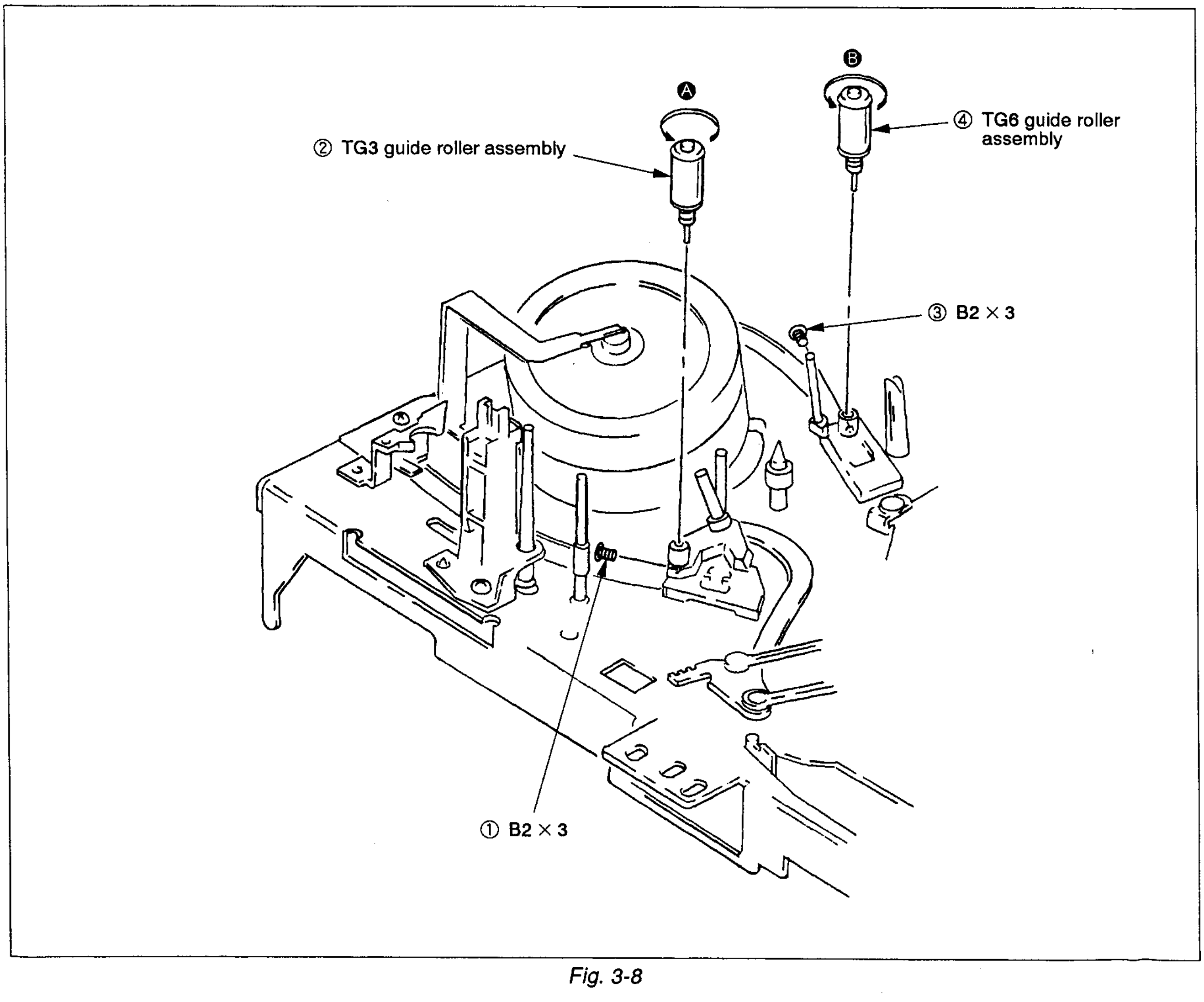

Ⓑ
Ⓐ
④ TG6 guide roller assembly
② TG3 guide roller assembly
③ B2 × 3
① B2 × 3

Fig. 3-8

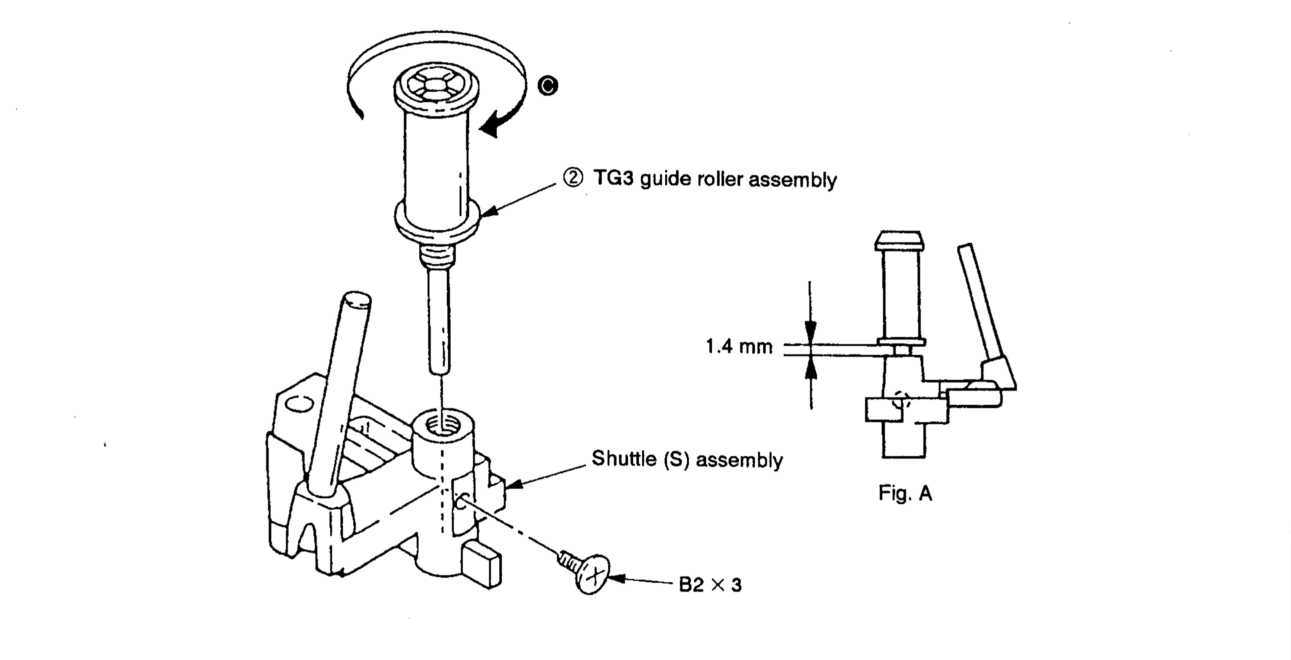

Ⓒ
② TG3 guide roller assembly
1.4 mm
Shuttle (S) assembly
Fig. A
B2 × 3

Fig. 3-9

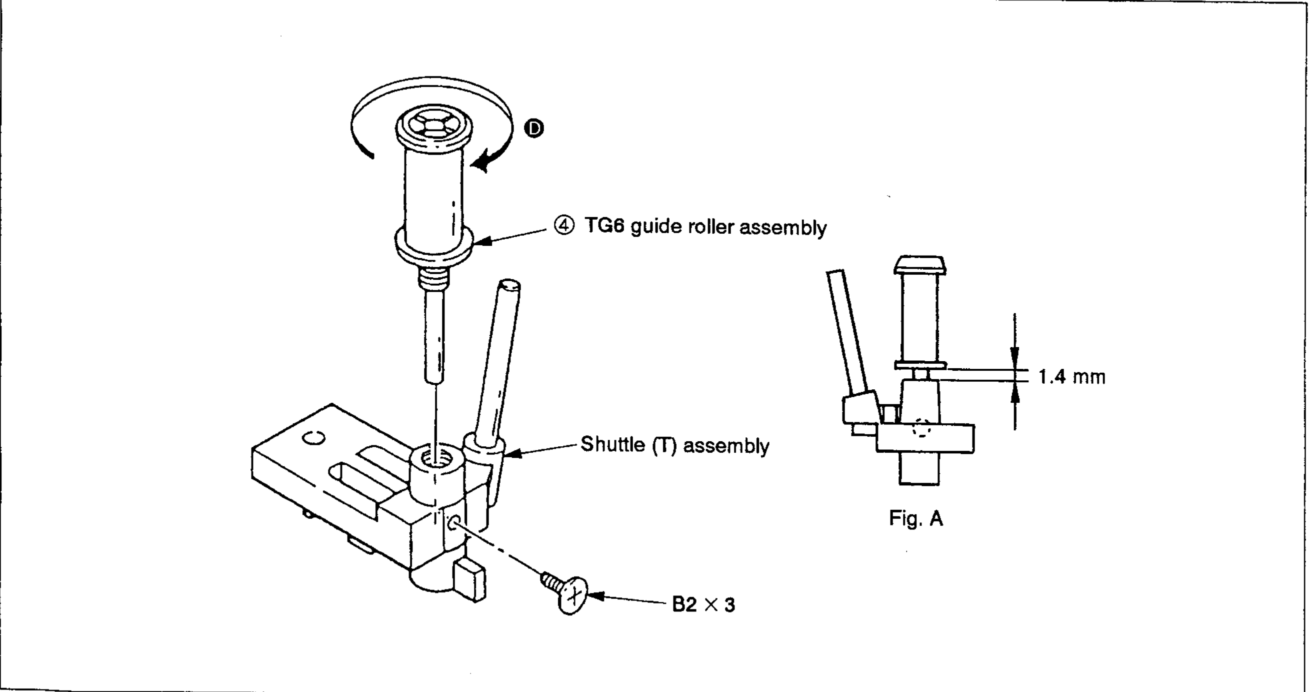

Ⓓ
④ TG6 guide roller assembly
1.4 mm
Shuttle (T) assembly
Fig. A
B2 × 3

Fig. 3-10

3-9. CAPSTAN MOTOR (Fig. 3-11)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove screws ① to pull out capstan motor ②.

[Note on Mounting]

- Keep clean the surface contacts tape of capstan motor ②.
- On tightening screws ①, first tighten screw A temporarily, next tighten screws in the order B to C to A.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

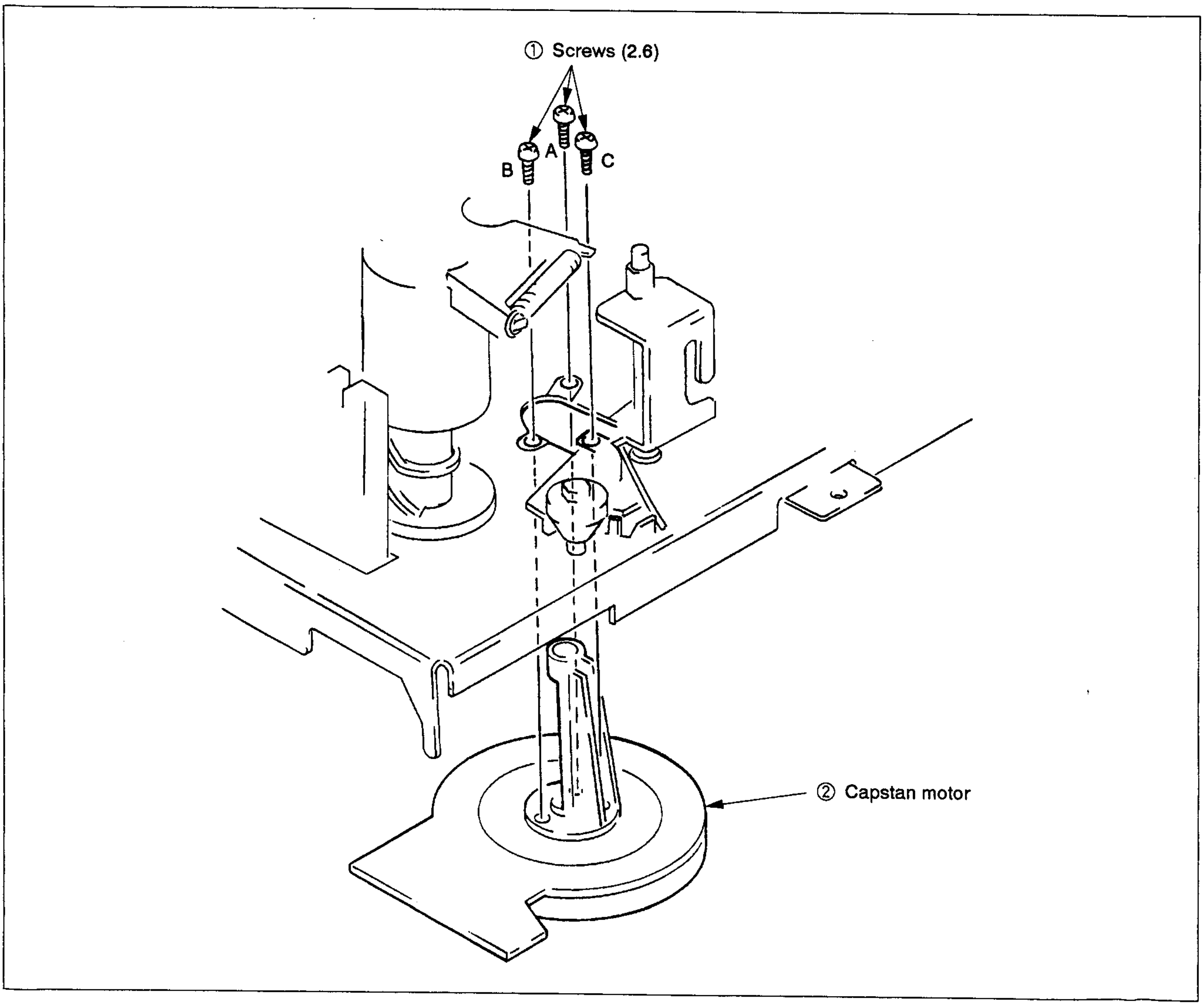


Fig. 3-11

3-10. MAIN BRAKE ASSEMBLIES S AND T (Fig. 3-12)

1) Remove tension spring ①.
2) Remove stopper washer (2) ② to remove neutrality arm ③.
3) Remove pendulum compulsion arm ④ and tension coil spring ⑤.
4) Remove stopper washer (2) ⑥ to remove main brake S assembly ⑦.
5) Remove stopper washer (2) ⑧ to remove main brake T assembly ⑨.

[Note on Mounting]

- Don't touch brake shoes Ⓐ and Ⓑ with bare hand.
- Apply FLOIL FG-055G (Jig Ref. No. J-12) to ☆ marked portions.

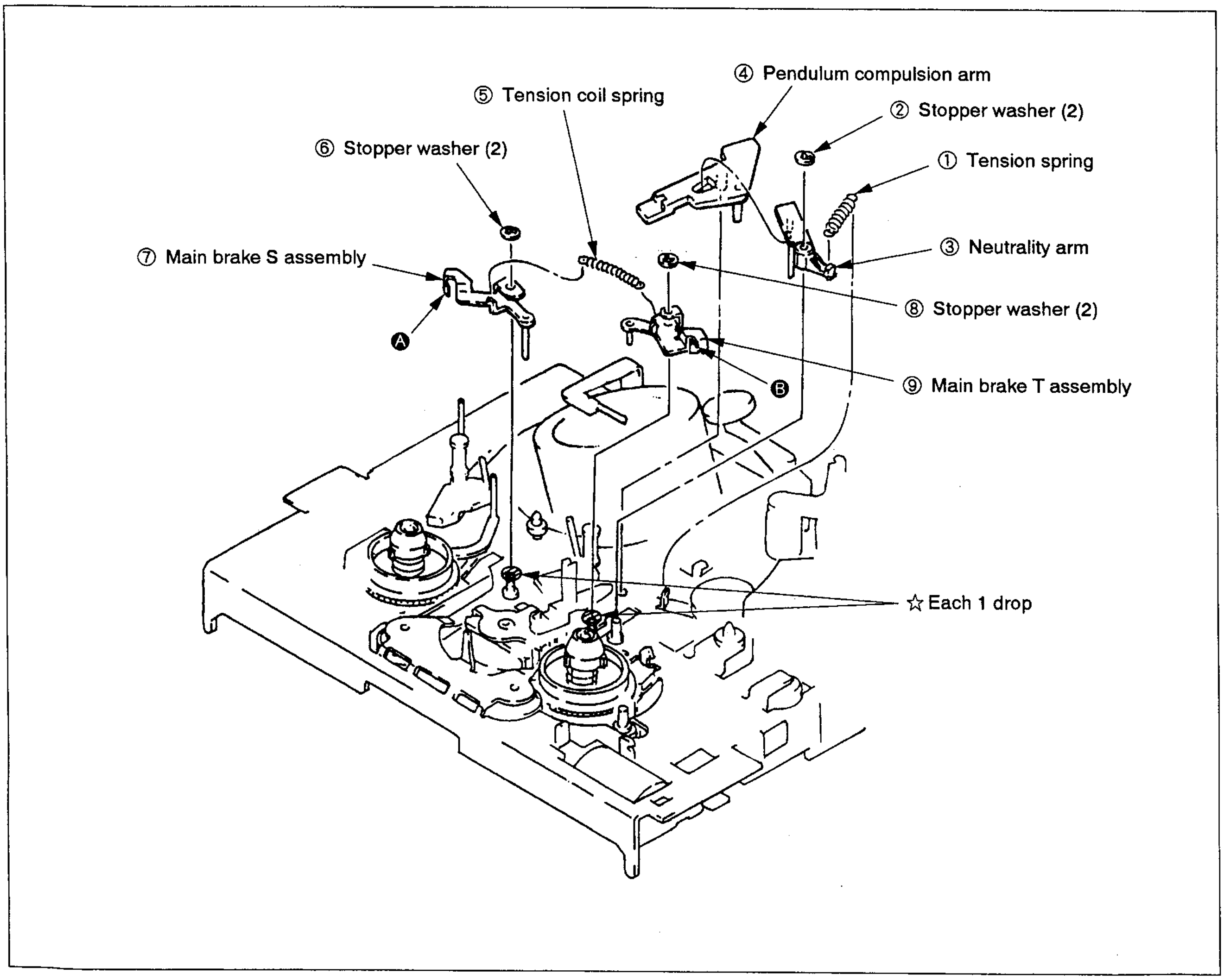

④ Pendulum compulsion arm
⑤ Tension coil spring
② Stopper washer (2)
⑥ Stopper washer (2)
① Tension spring
⑦ Main brake S assembly
③ Neutrality arm
⑧ Stopper washer (2)
Ⓐ
⑨ Main brake T assembly
Ⓑ
☆Each 1 drop

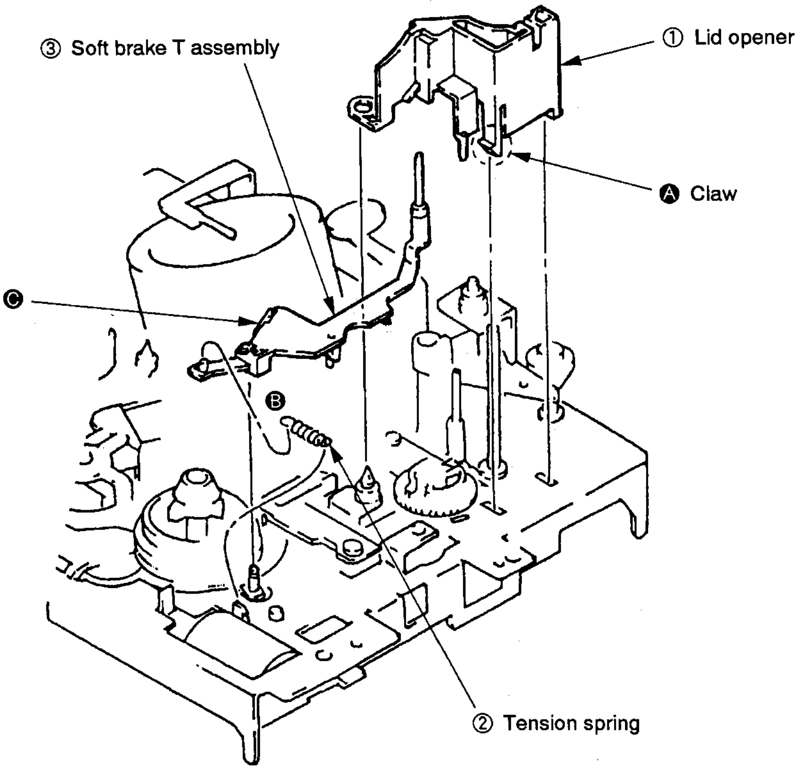
Fig. 3-12

3-11. SOFT BRAKE T ASSEMBLY (Fig. 3-13)

1) Remove pinch press block assembly. (Refer to 3-6.)
2) Remove lid opener ① carefully not to damage claw Ⓐ.
3) Remove tension spring ② from side Ⓑ to pull out soft brake T assembly ③.

[Note on Mounting]

- Don't touch brake shoes Ⓒ with bare hand.



③ Soft brake T assembly
① Lid opener
Ⓐ Claw
Ⓒ
Ⓑ
② Tension spring

Fig. 3-13

3-12. RVS BRAKE ARM ASSEMBLY, REEL TABLE (T) ASSEMBLY (Fig. 3-14)

1) Remove main brake T assembly. (Refer to 3-10.)
2) Remove soft brake T assembly. (Refer to 3-11.)
3) Remove tension coil spring ① in the order Ⓐ to Ⓑ.
4) Remove RVS brake arm assembly ②.
5) Remove stopper washer (2) ③ to pull out reel table (T) assembly ④.

[Note on Mounting]

- Apply one drop of Diamond Oil NT-68 (Jig Ref. No. J-13) to ☆ marked portion before mounting reel table (T) assembly ④. (Fig. A)
- Don't touch the hatched portion on reel table (T) assembly ④ and brake shoe Ⓒ of RVS brake arm assembly ② with bare hand.

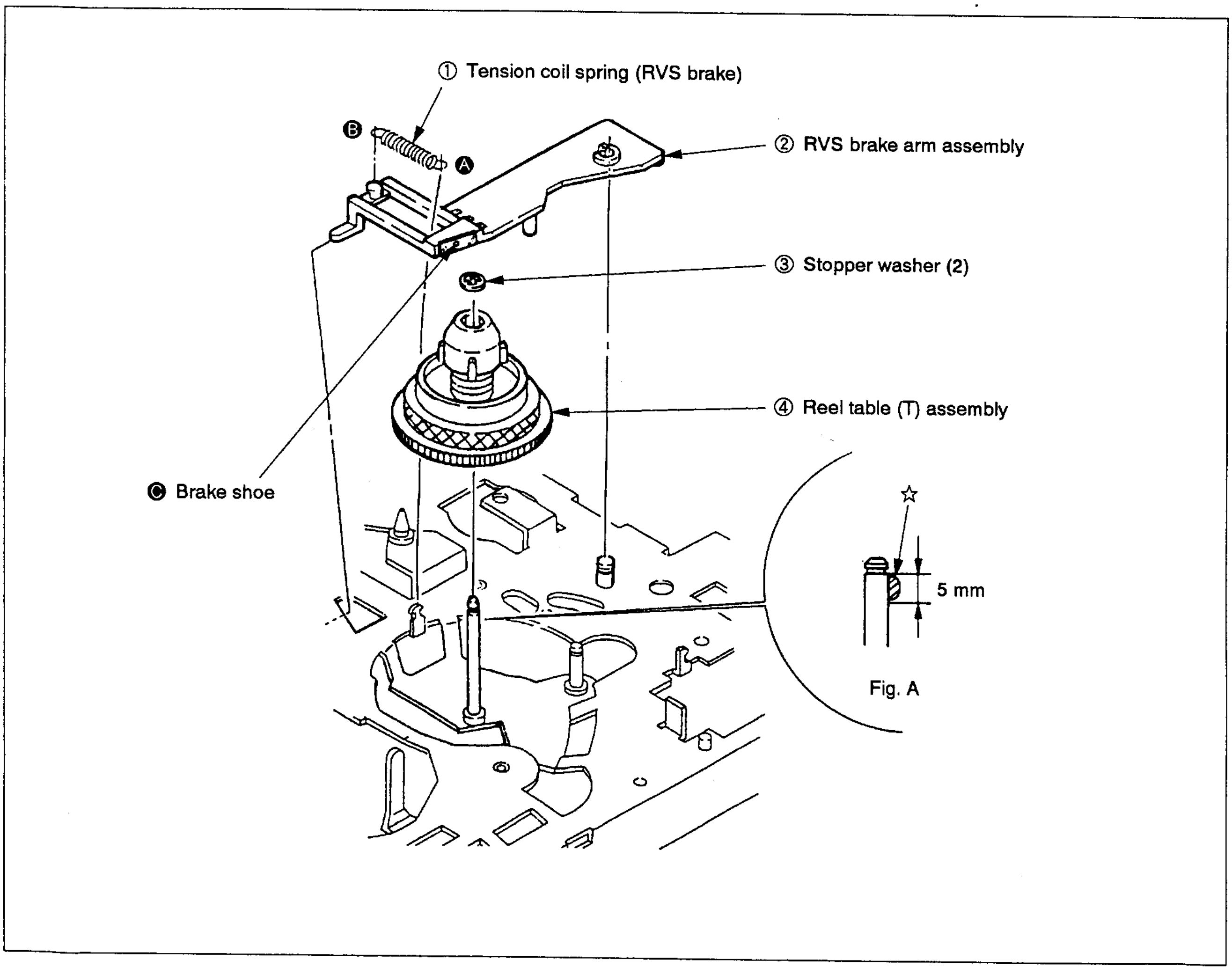

① Tension coil spring (RVS brake)
Ⓑ
Ⓐ
② RVS brake arm assembly
③ Stopper washer (2)
④ Reel table (T) assembly
Ⓒ Brake shoe
☆
5 mm
Fig. A

Fig. 3-14

3-13. TG8 ASSEMBLY (Fig. 3-15)

1) Remove TG8 retainer ① to pull out TG8 assembly ②.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portion.
- Keep clean the surface contacts tape of TG8 assembly ②.
- Be careful not to change the shape of TG8 retainer ①.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

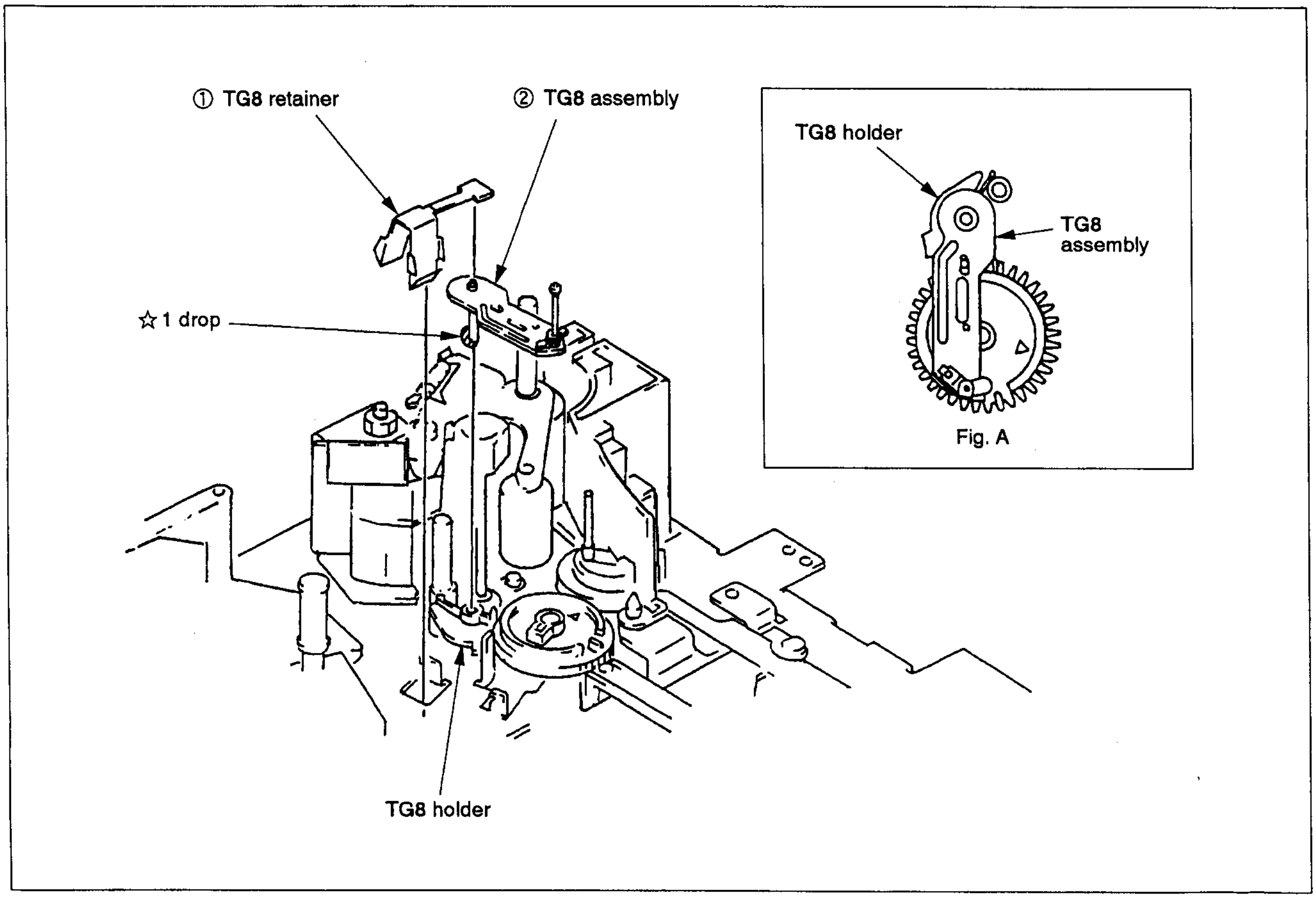

① TG8 retainer
② TG8 assembly
☆1 drop
TG8 holder
TG8 holder
TG8 assembly
Fig. A

Fig. 3-15

3-14. TG8 HOLDER (Fig. 3-16)

1) Remove TG8 assembly. (Refer to 3-13)
2) Pull out TG8 holder ①.

[Note on Mounting]

- Be careful about the direction of TG8 holder ①. (Ⓐ of Fig. A)

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

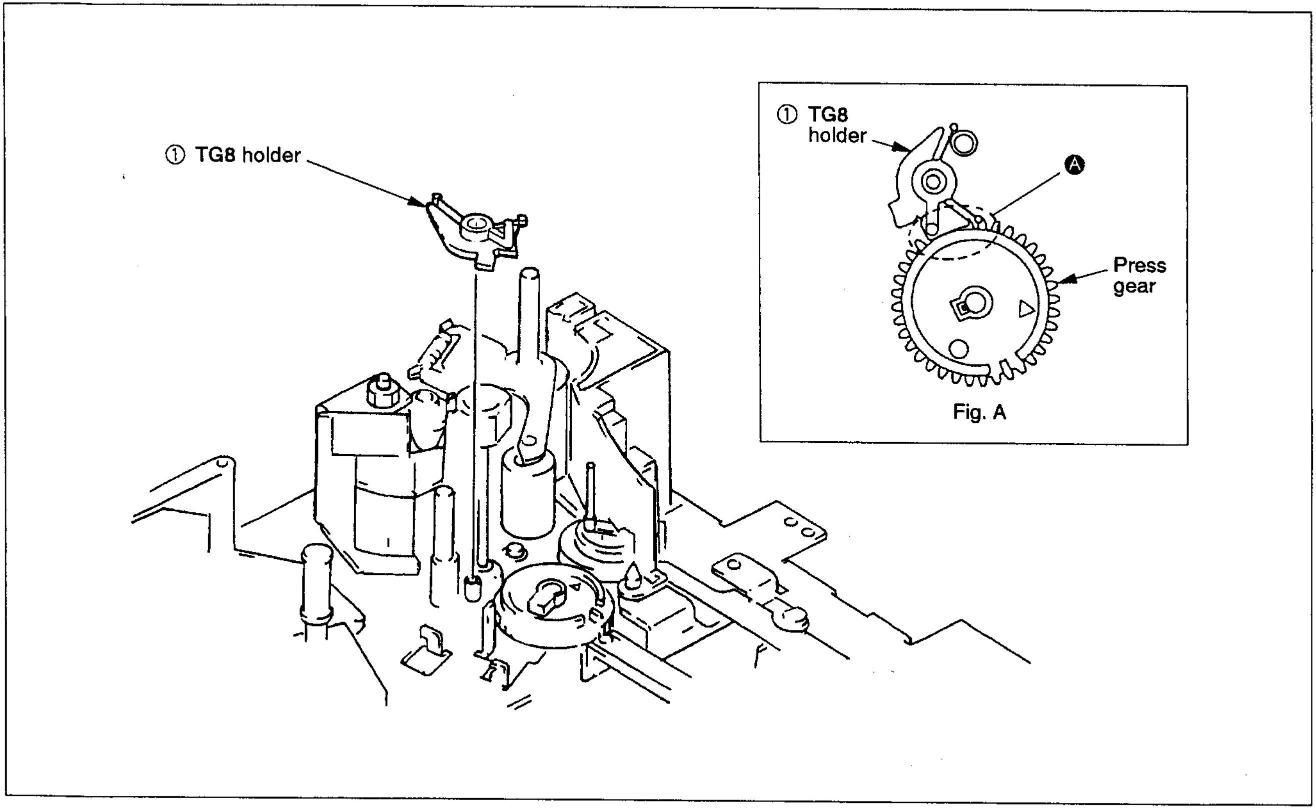

① TG8 holder
① TG8 holder
Ⓐ
Press gear
Fig. A

Fig. 3-16

3-15. TG8 AND PRESS GEARS (Fig. 3-17)

1) Remove pinch press block assembly. (Refer to 3-6.)
2) Remove soft brake T assembly. (Refer to 3-11.)
3) Remove TG8 assembly. (Refer to 3-13.)
4) Remove TG8 holder. (Refer to 3-14.)
5) Pull out TG8 gear ① or press gear ②.

[Note on Mounting]

- Adjust the holes on gears to the holes on chassis. (Fig. A)
- Adjust the arrows carved on gears each other. (Fig. A)

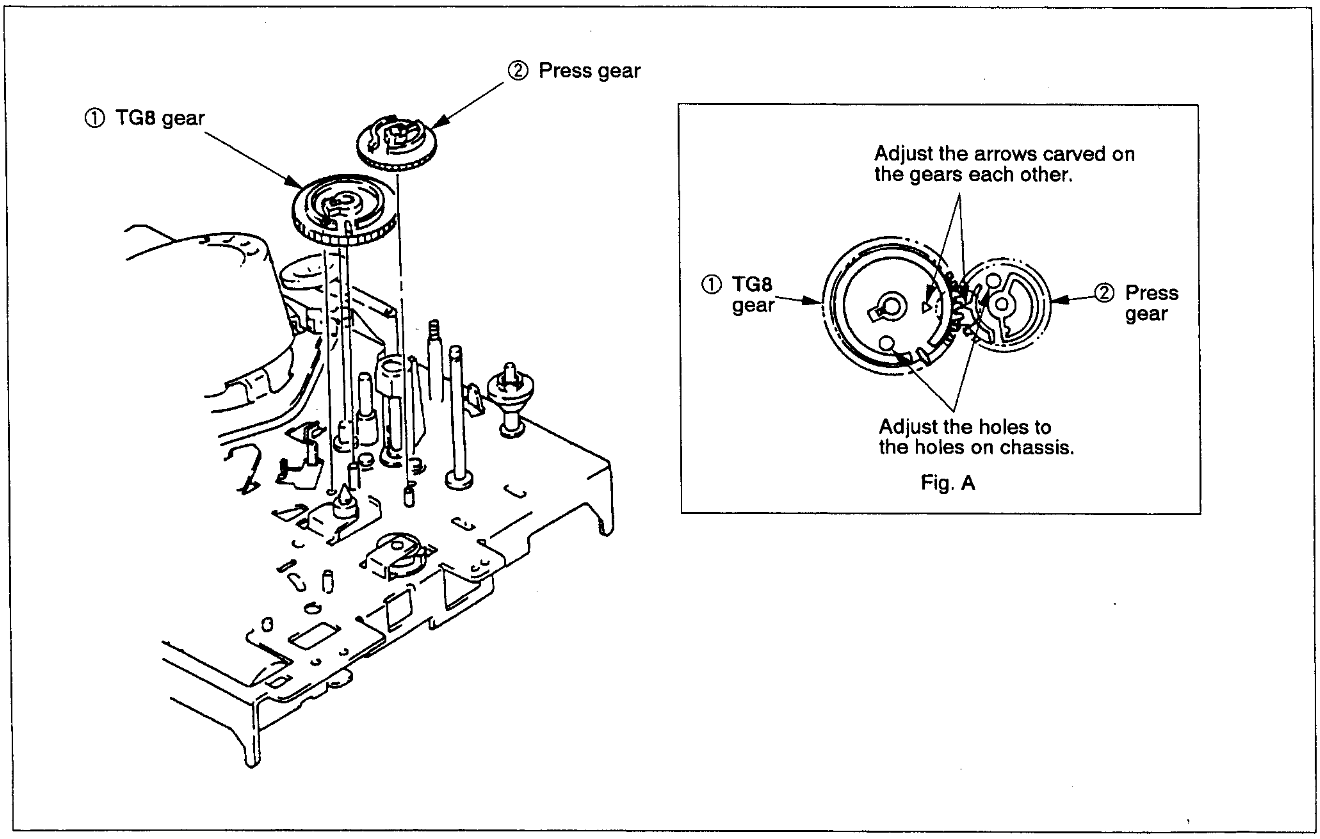

② Press gear
① TG8 gear
Adjust the arrows carved on the gears each other.
① TG8 gear
② Press gear
Adjust the holes to the holes on chassis.

Fig. A

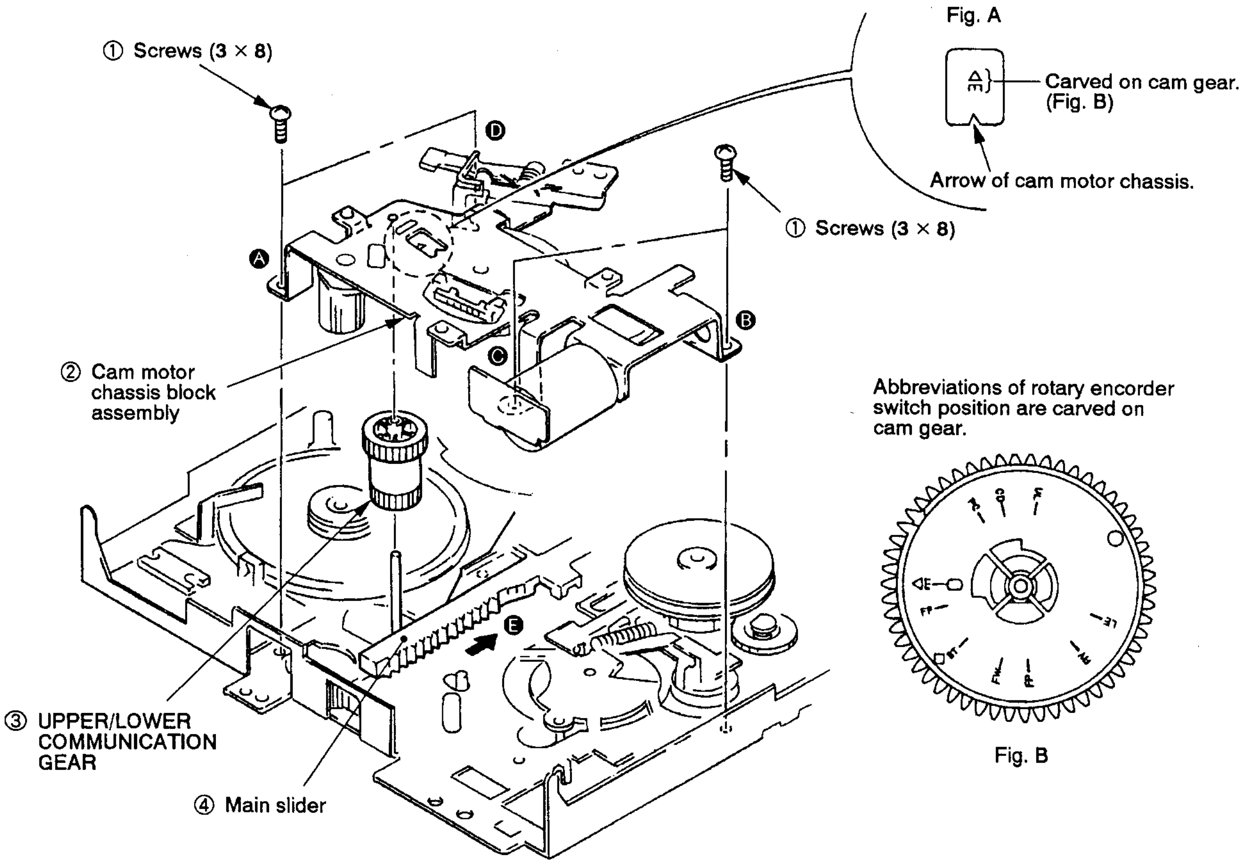
Fig. 3-17

3-16. CAM MOTOR CHASSIS BLOCK ASSEMBLY, UPPER/LOWER COMMUNICATION GEAR (Fig. 3-18)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove screws ① to remove cam motor chassis assembly ②.
4) Pull out upper/lower communication gear ③.

[Note on Mounting]

- First, check main slider ④ slides fully in the arrow Ⓔ direction.
- Set rotary encoder switch position to "E" seen from the window of cam motor chassis. (Fig. A)
- Tighten screws ① in the order Ⓐ to Ⓑ to Ⓒ to Ⓓ.



① Screws (3 × 8)
Ⓓ
Ⓐ
Ⓒ
Ⓑ
① Screws (3 × 8)
Fig. A
Carved on cam gear. (Fig. B)
Arrow of cam motor chassis.
② Cam motor chassis block assembly
Ⓔ
③ UPPER/LOWER COMMUNICATION GEAR
④ Main slider
Abbreviations of rotary encorder switch position are carved on cam gear.
Fig. B

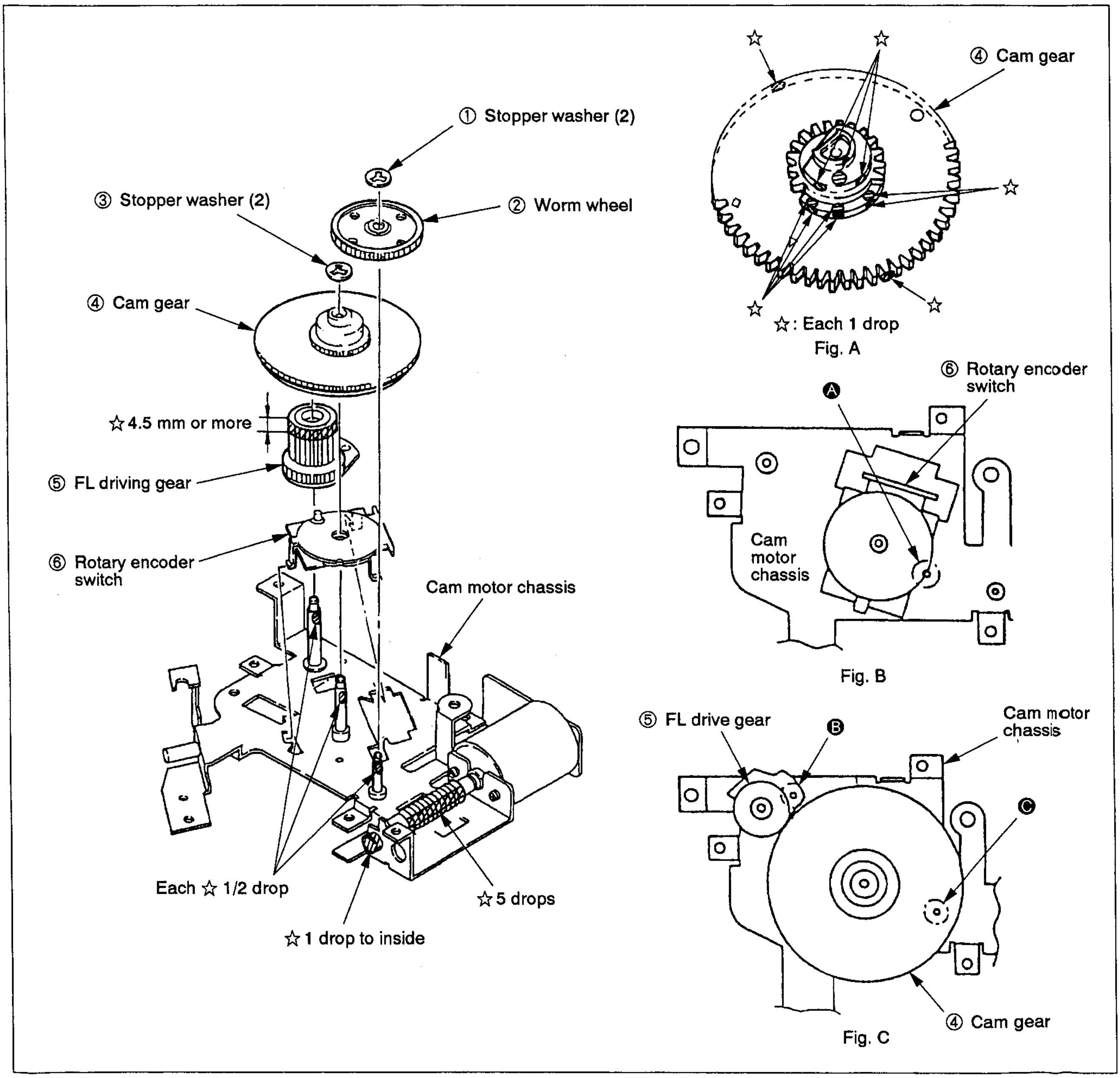
Fig. 3-18

3-17. ROTARY ENCODER SWITCH (Fig. 3-19)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly (Refer to 3-15.) and turn upside on the bottom.
4) Remove stopper washer (2) ① to pull out worm wheel ②.
5) Remove stopper washer (2) ③ to pull out cam gear ④.
6) Pull out FL driving gear ⑤ and rotary encoder switch ⑥.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions. (Fig. 3-19, A)
- Adjust the hole Ⓐ to the hole on cam motor chassis. (Fig. B)
- Adjust the holes Ⓑ and Ⓒ to the hole on cam motor chassis. (Fig. C)



① Stopper washer (2)
③ Stopper washer (2)
② Worm wheel
④ Cam gear
☆4.5 mm or more
⑤ FL driving gear
⑥ Rotary encoder switch
Cam motor chassis
Each ☆ 1/2 drop
☆5 drops
☆1 drop to inside
☆
④ Cam gear
☆: Each 1 drop
Fig. A
⑥ Rotary encoder switch
Ⓐ
Cam motor chassis
Fig. B
⑤ FL drive gear
Ⓑ
Cam motor chassis
Ⓒ
④ Cam gear
Fig. C

Fig. 3-19

3-18. MAIN SLIDER (Fig. 3-20)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove screw ① to remove retainer ②.
5) Pull out main slider ③.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) as shown in Fig. A.
- At the last, slide main slider fully in the arrow Ⓐ direction.

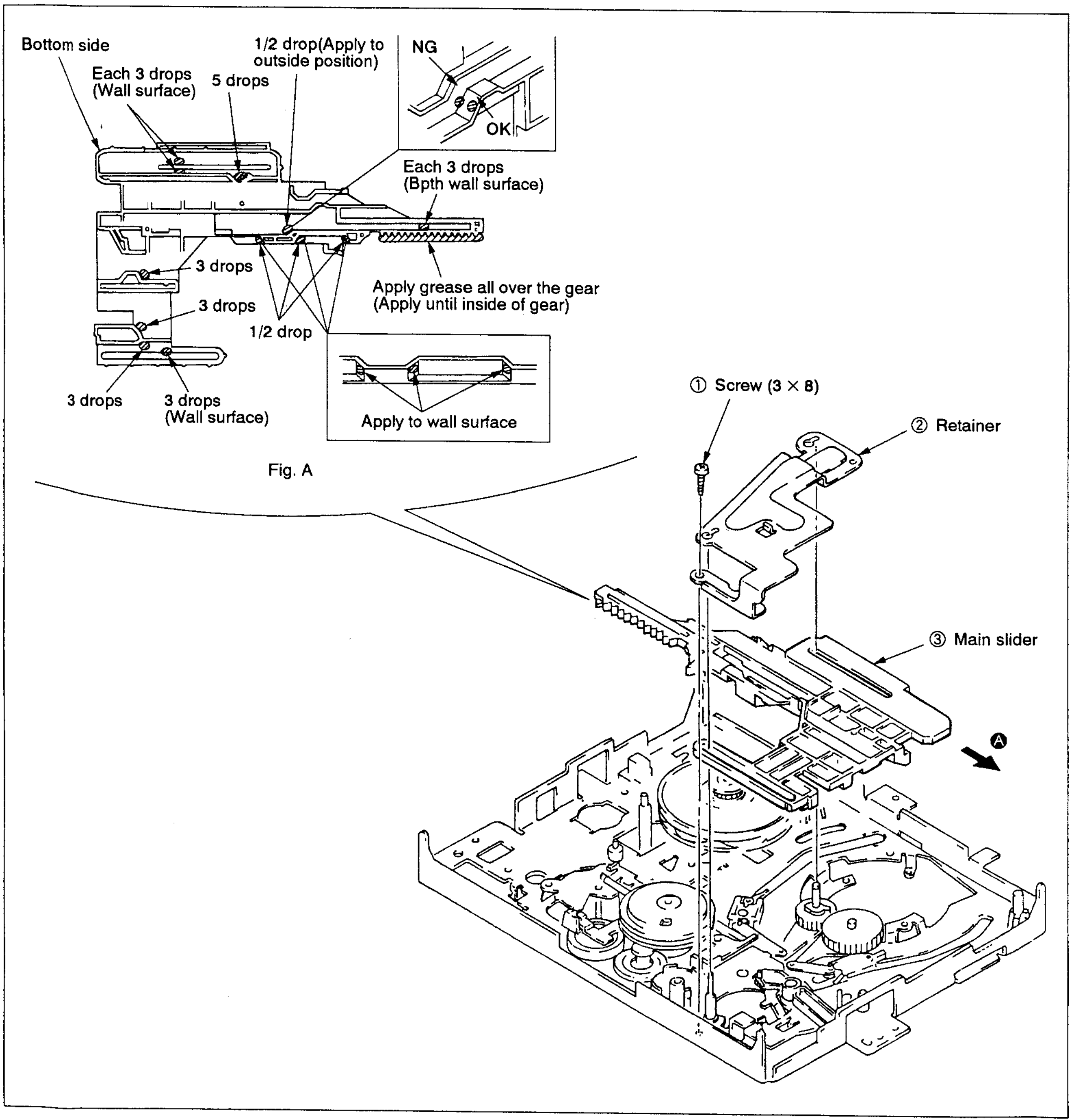

Bottom side
Each 3 drops (Wall surface)
5 drops
1/2 drop(Apply to outside position)
NG
OK
Each 3 drops (Bpth wall surface)
3 drops
3 drops
1/2 drop
Apply grease all over the gear (Apply until inside of gear)
3 drops
3 drops (Wall surface)
Apply to wall surface
Fig. A
① Screw (3 × 8)
② Retainer
③ Main slider
Ⓐ

Fig. 3-20

3-19. SHUTTLE T BLOCK AND LOADING GEAR T BLOCK ASSEMBLIES (Fig. 3-21)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-18.)
5) Remove screw ① to remove loading leaf (T) spring ② and shuttle T block assembly ③.
6) Pull out loading gear T block assembly ④.

[Note on Mounting]

- Adjust the phase 🅐 between loading gear (T) and loading gear (S). (Fig. A)
- Keep clean the surface contacts tape of shuttle T block assembly ③.

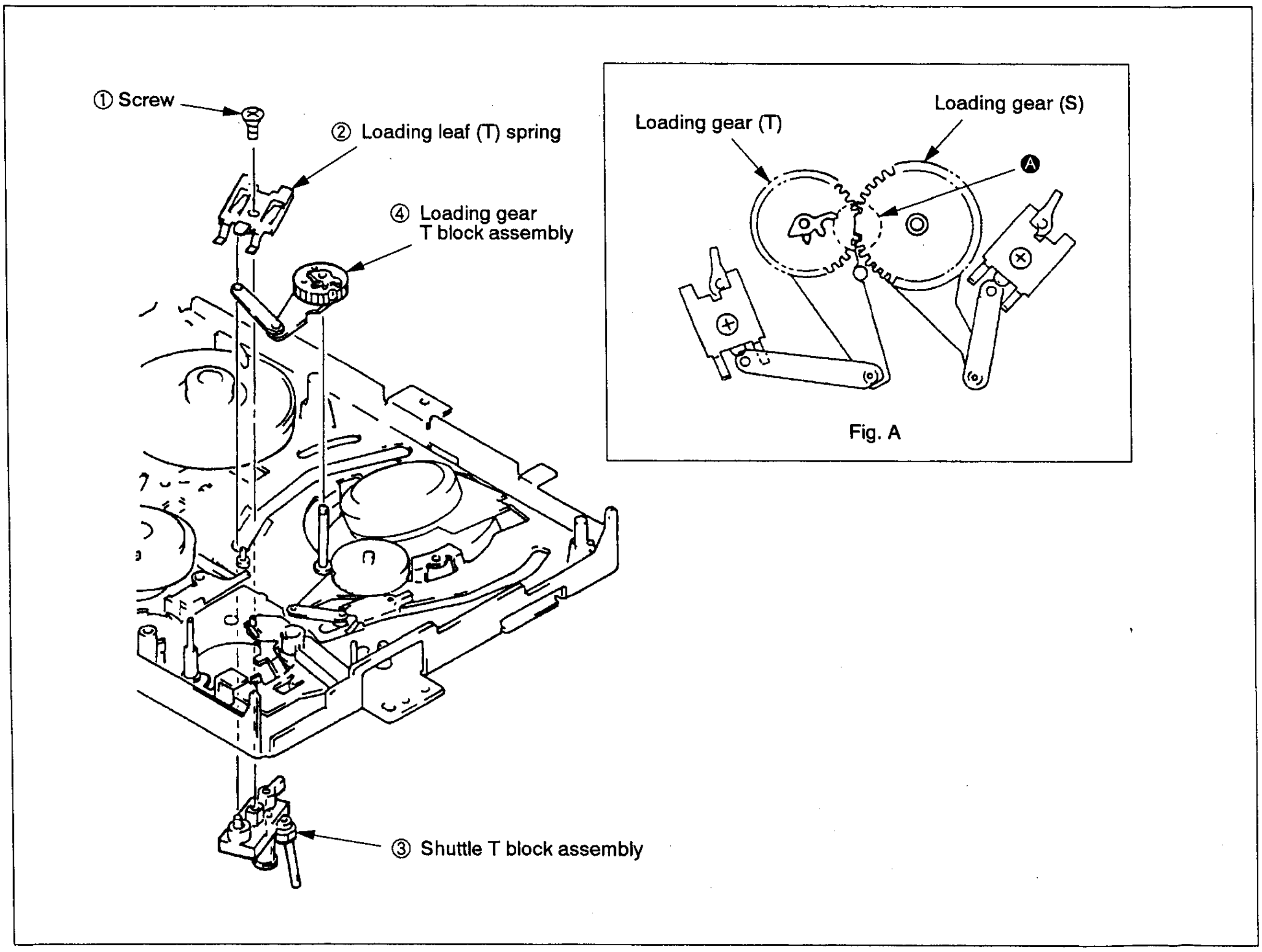

① Screw
② Loading leaf (T) spring
④ Loading gear T block assembly
③ Shuttle T block assembly
Loading gear (T)
Loading gear (S)
🅐

Fig. A

Fig. 3-21

3-20. SHUTTLE S BLOCK AND LOADING GEAR S BLOCK ASSEMBLIES (Fig. 3-22)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-15.)
5) Remove screw ① to remove loading leaf (S) spring ② and shuttle S block assembly ③.
6) Pull out loading gear S block assembly ④.

[Note on Mounting]

- Adjust the phase 🅐 between loading gear (S) and loading gear (S). (Fig. A)
- Keep clean the surface contacts tape of shuttle S block assembly ③.

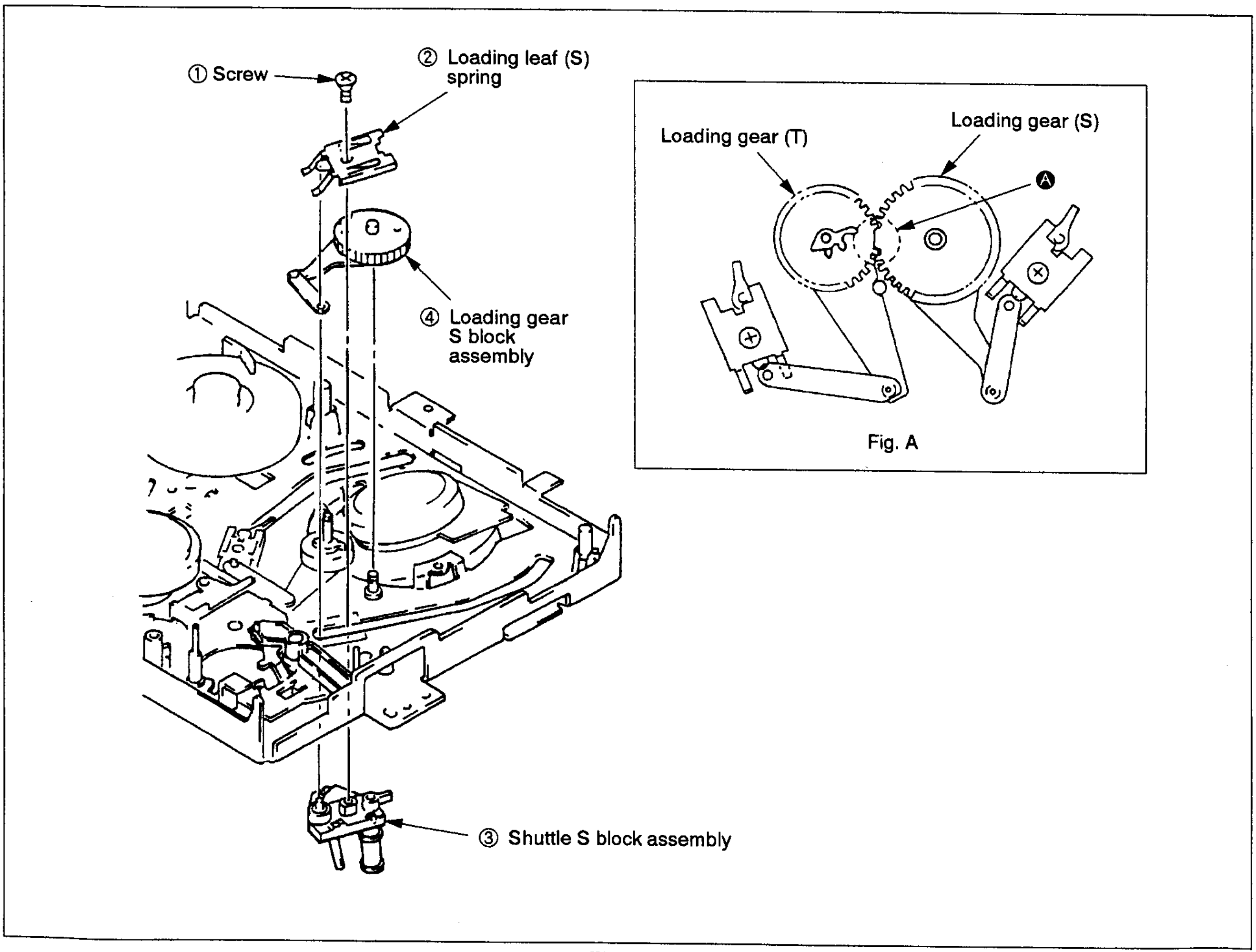

① Screw
② Loading leaf (S) spring
④ Loading gear S block assembly
③ Shuttle S block assembly
Loading gear (T)
Loading gear (S)
🅐

Fig. A

Fig. 3-22

3-21. REEL TABLE (S) ASSEMBLY (Fig. 3-23)

1) Remove tension spring ① from the chassis side.
2) Remove stopper washer (2) ② to pull out soft brake (S) ③.
3) Move TG1 band ④ over the reel table.
4) Remove stopper washer (2) ⑤.
5) While pressing main brake S assembly ⑥, pull out reel table (S) assembly ⑦.

[Note on Mounting]

- Apply one drop of Diamond Oil NT-68 (Jig Ref. No. J-13) to ☆ marked portion before mounting reel table (S) assembly ⑥. (Fig. A)
- Don't touch the hatched portion on reel table (S) assembly ⑥ with bare hand.

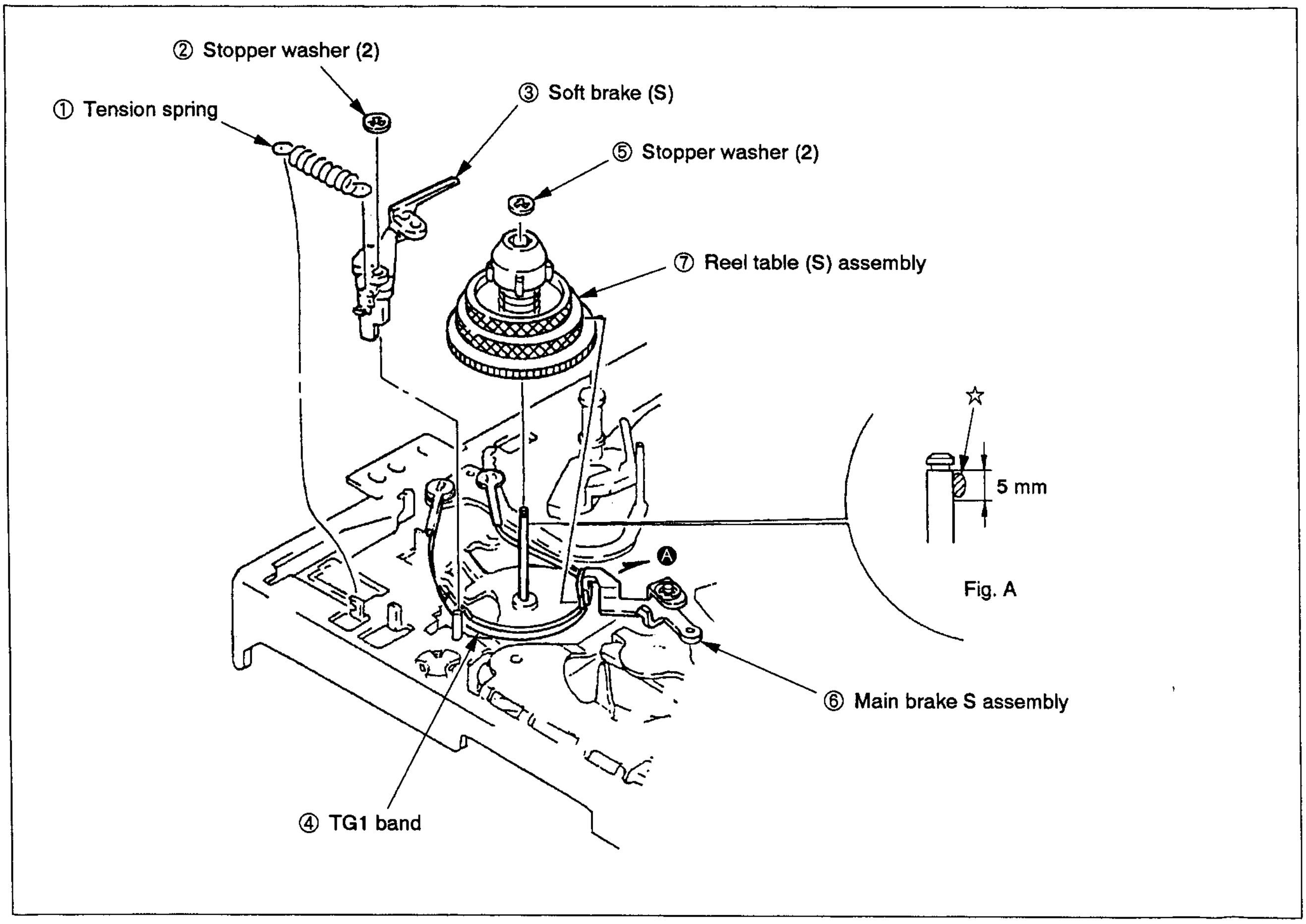

② Stopper washer (2)
① Tension spring
③ Soft brake (S)
⑤ Stopper washer (2)
⑦ Reel table (S) assembly
☆
5 mm
Fig. A
A
⑥ Main brake S assembly
④ TG1 band

Fig. 3-23

3-22. TG1 ASSEMBLY (Fig. 3-24)

1) Set the mechanism to the loading-end condition referring to 1-1. (Cam gear indicates "LE". (Refer to Fig. A and B of Fig. 3-18.))
2) Remove tension spring ① in the order Ⓐ to Ⓑ.
3) Remove stopper washer (2) ② to pull out TG1 assembly ③.

[Note on Mounting]

- Apply one drop of Diamond Oil NT-68 (Jig Ref. No. J-13) to ☆ marked portion.
- Keep clean the felt side of TG1 assembly.

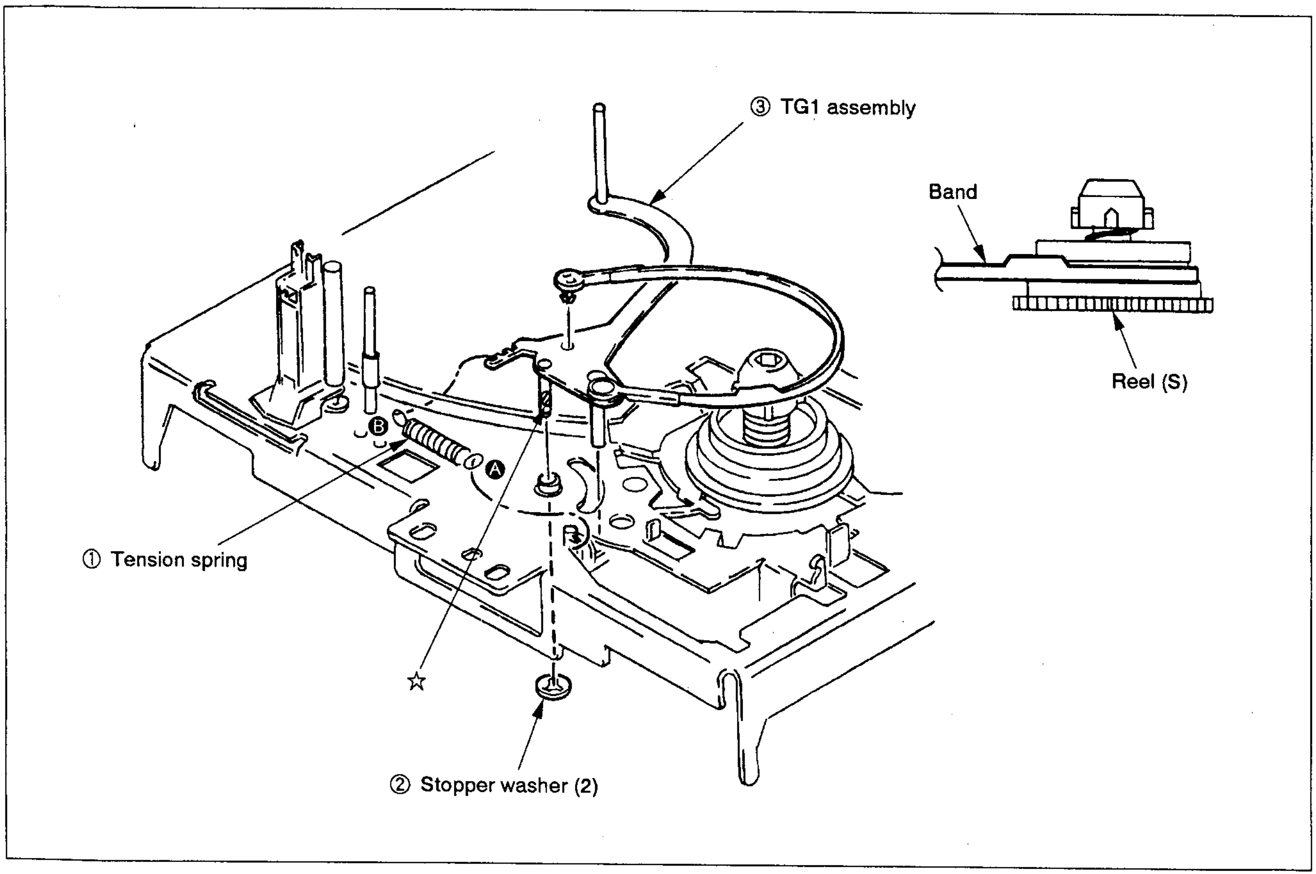

③ TG1 assembly
Band
Reel (S)
Ⓑ
Ⓐ
① Tension spring
☆
② Stopper washer (2)

Fig. 3-24

3-23. S WINDING BLOCK ASSEMBLY (Fig. 3-25)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-18.)
5) Remove stopper washer (2) ① to pull out S winding block assembly ②.
6) Remove torsion spring ③.

[Note on Mounting]

- At the last, hang torsion spring ② to the position Ⓐ.
- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions.

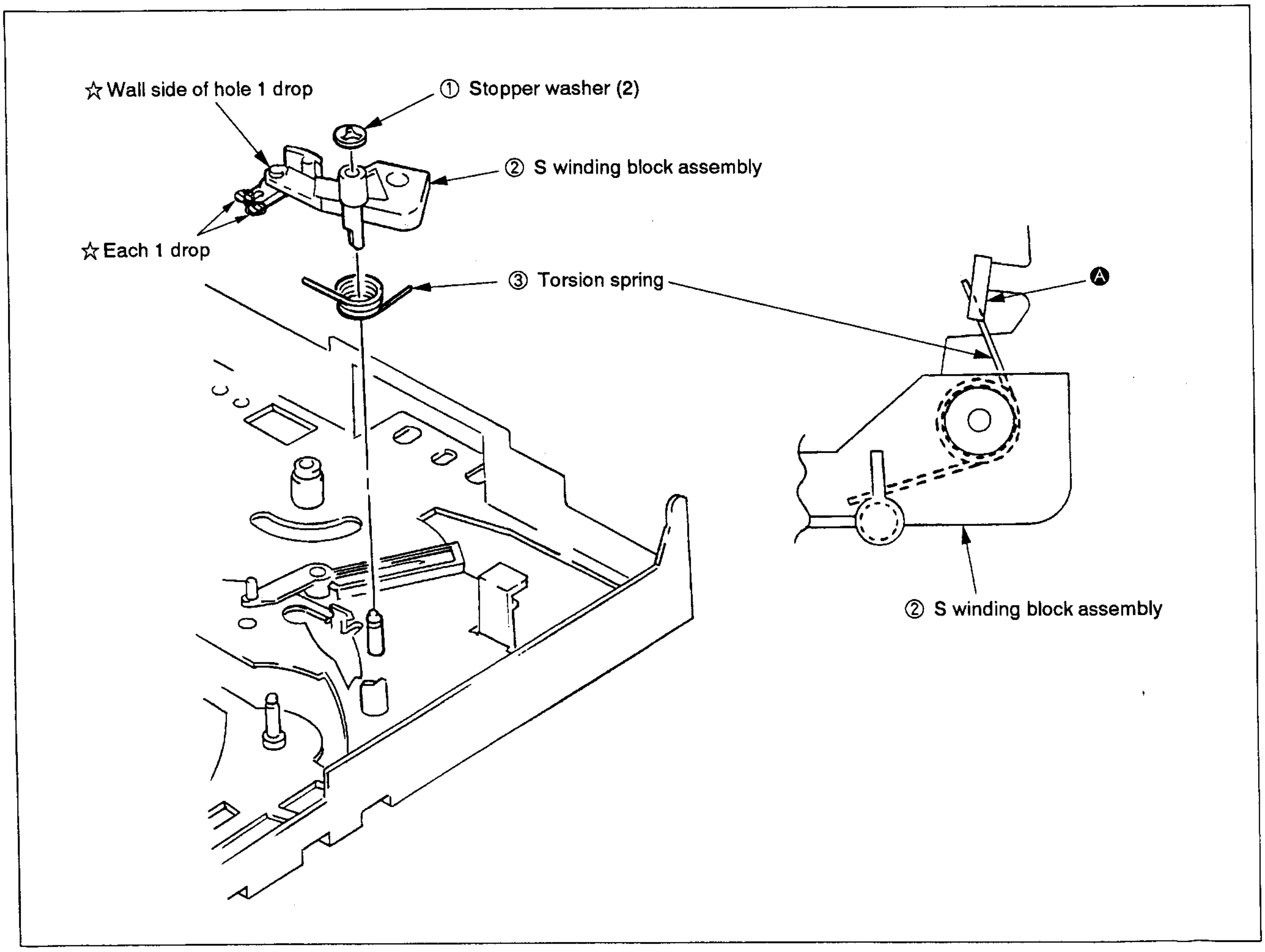

☆Wall side of hole 1 drop
① Stopper washer (2)
② S winding block assembly
☆Each 1 drop
③ Torsion spring
Ⓐ
② S winding block assembly

Fig. 3-25

3-24. TRIGGER LEVER AND RKB BLOCK ASSEMBLIES (Fig. 3-26)

1) Remove timing belt. (Refer to 3-3.)
2) Remove CAP brake assembly. (Refer to 3-4.)
3) Remove cam motor chassis block assembly. (Refer to 3-16.)
4) Remove main slider. (Refer to 3-18.)
5) Remove tension spring ① in the order Ⓐ to Ⓑ to remove trigger lever assembly ②.
6) Remove screws (3 × 8) ③ to remove RKB block assembly ④.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portions on trigger lever assembly. (Fig. A)

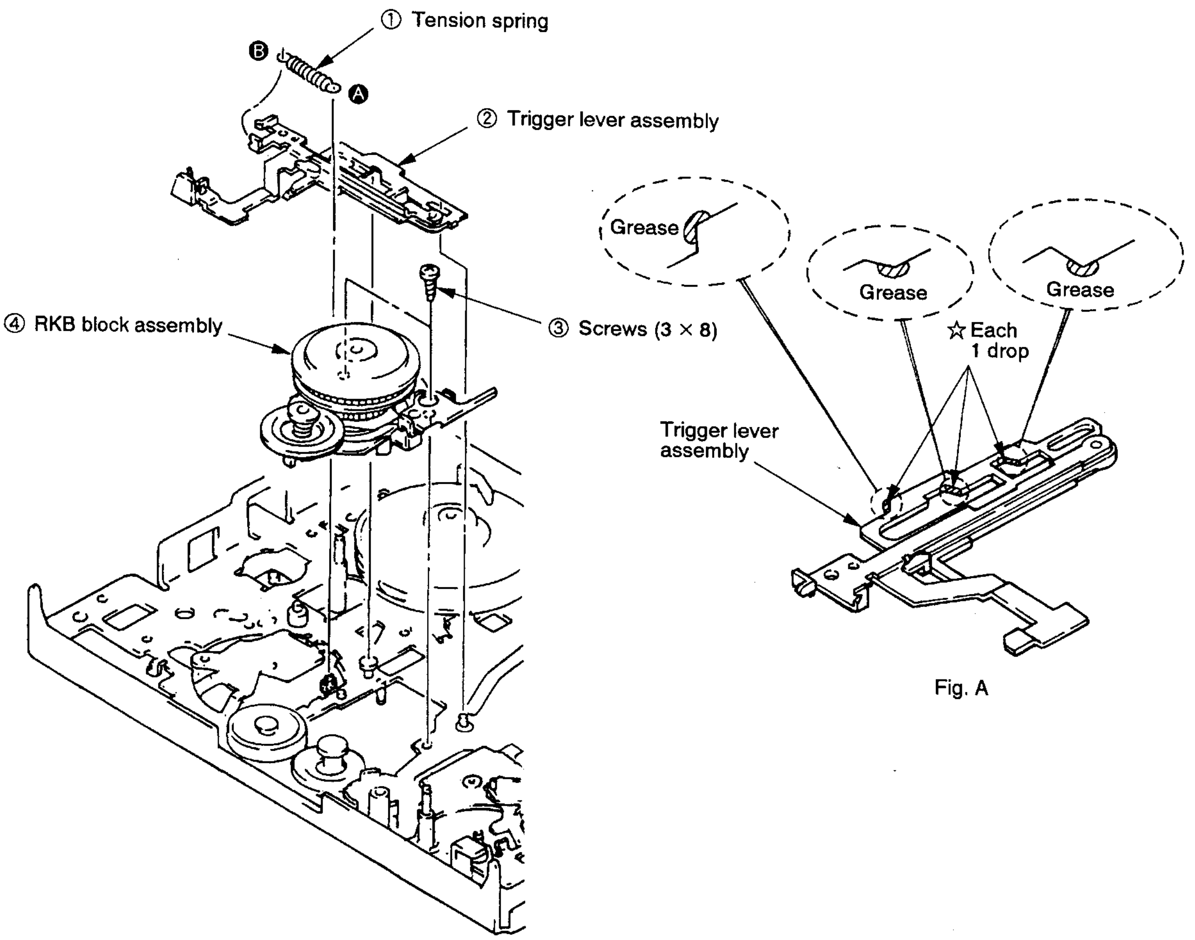

① Tension spring
Ⓑ
Ⓐ
② Trigger lever assembly
④ RKB block assembly
③ Screws (3 × 8)
Grease
Grease
Grease
☆Each
1 drop
Trigger lever
assembly
Fig. A

Fig. 3-26

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads.

Each component part of the tape transport system particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted, when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. TENSION REGULATOR (TG1) POSITION/ TENSION ADJUSTMENT (Fig. 4-1)

Purpose: stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

• Position adjustment

Mode	Treading is completed without a cassette loaded
Adjustment locations	Eccentric pin of TG1 band assembly

[Adjustment Method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the unit to play back, then turn the eccentric pin so that the tip of tension arm goes to the left side line carved on the mechanical chassis. (Fig. A)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

• Tension adjustment

Mode	Playback
Measuring instrument/tool	Torque cassete
Adjustment locations	Position for hooking the tension spring
Specified value	36 to 44 g•cm

[Adjustment Method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction 🅐.
   When the reading is less than the standards: Move the spring toward direction 🅑.

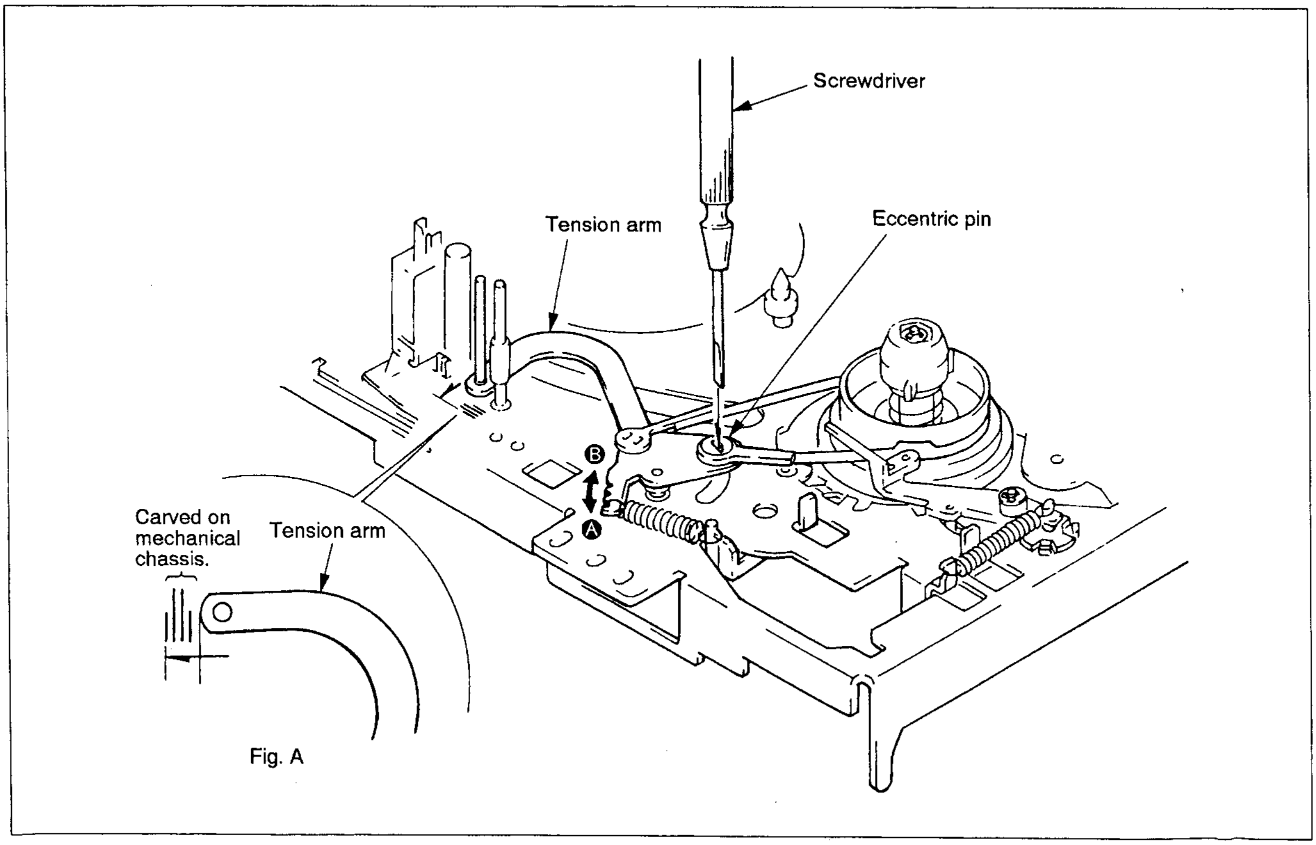


Fig. 4-1

4-1-2. TG8 GUIDE ROLLER HEIGHT ADJUSTMENT (Fig. 4-2)

Mode	Playback
Jig	Blank tape
Adjustment locations	Guide roller height adjustment screw
Specified value	0 to 0.1 mm

Procedure:

1) Set the tape, during CUE playing back, check the height from lower flange of TG7 to the running tape. (Fig. A)
2) During REV playing back, check the height from lower flange of TG7 to the running tape. (Fig. B)
3) When the difference between items 1) and 2) doesn't go to specified value, adjust by turning TG8 guide roller height adjustment screw.
4) Check the tape is creased or not between the capstan and TG8, adjust with TG8 guide roller height adjustment screw so that the tape is not creased during normal playback, CUE and REV.

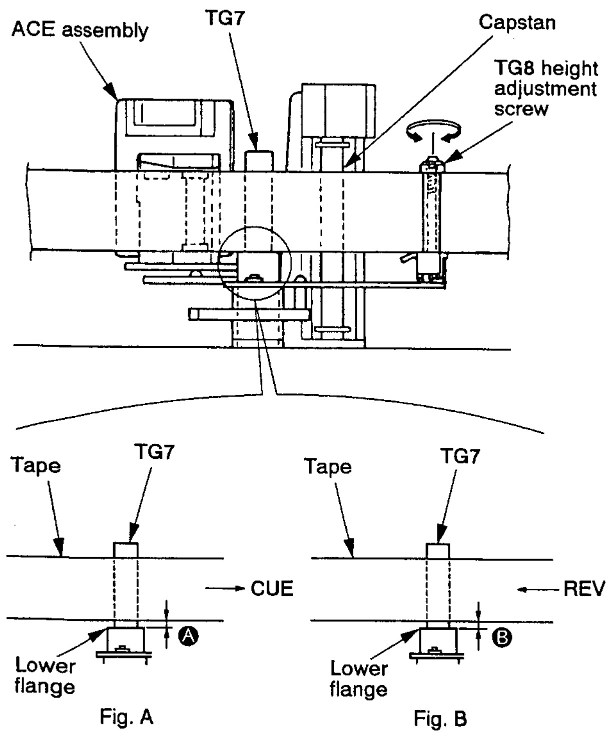


Fig. A

Fig. B

Difference between Ⓐ and Ⓑ = 0 to 0.1 mm

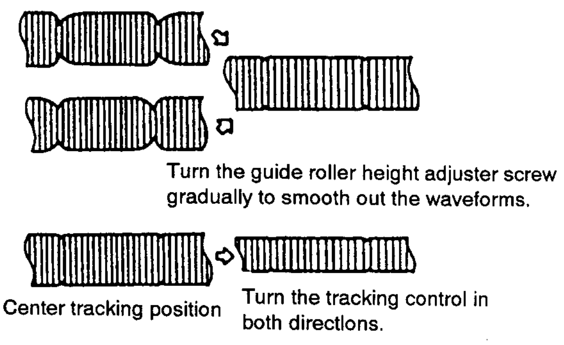
Fig. 4-2

4-1-3. HEIGHT ADJUSTMENT OF GUIDE ROLLERS NO. 3 AND NO. 6 (Fig. 4-3)

Mode	Playback
Signal	Alignment tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw

[Adjustment Method]

1) Tracking (playback): Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
(If adjustment is made after the drum is replaced, the tracking must be set at the max. RF output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.



Turn the guide roller height adjuster screw gradually to smooth out the waveforms.

Turn the tracking control in both directions.

Fig. 4-3

4-1-4. ACE HEAD ASSEMBLY ADJUSTMENT (ROUGH ADJUSTMENT) (Figs. 4-4 and 4-5)

Purpose: Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Mount the ACE head assembly. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or rise up noticeably near the ACE head.
4) If the tape curls up or rises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
   (The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

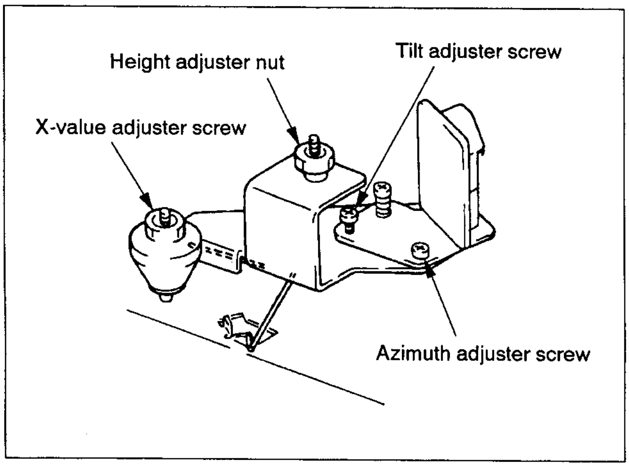

Height adjuster nut
Tilt adjuster screw
X-value adjuster screw
Azimuth adjuster screw

Fig. 4-4

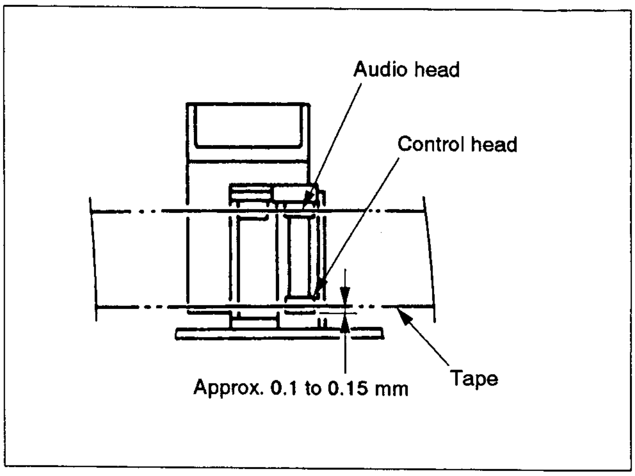

Audio head
Control head
Approx. 0.1 to 0.15 mm
Tape

Fig. 4-5

4-1-5. ACE HEAD ASSEMBLY ADJUSTMENT (PRECISION ADJUSTMENT)

Mode	Playback
Signal	Alignment tape (1kHz track)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw, Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or rise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

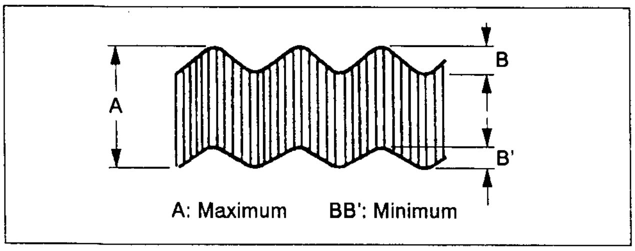

A
B
B'
A: Maximum
BB': Minimum

Fig. 4-6

4-1-6. X-VALUE ADJUSTMENT

Purpose: To obtain compatibility with other VTR

Precaution: Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playback
Signal	Alignment tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SW P pin for RF PC board check.
Adjustment locations	X-value adjuster screw

[Adjustment Method]

- **Adjustment by Hi-Fi alignment tape (NTSC only)**
  When the tracking is set at the center position (by pressing the ▽ and △ keys simultaneously), adjust the RF output to maximum.

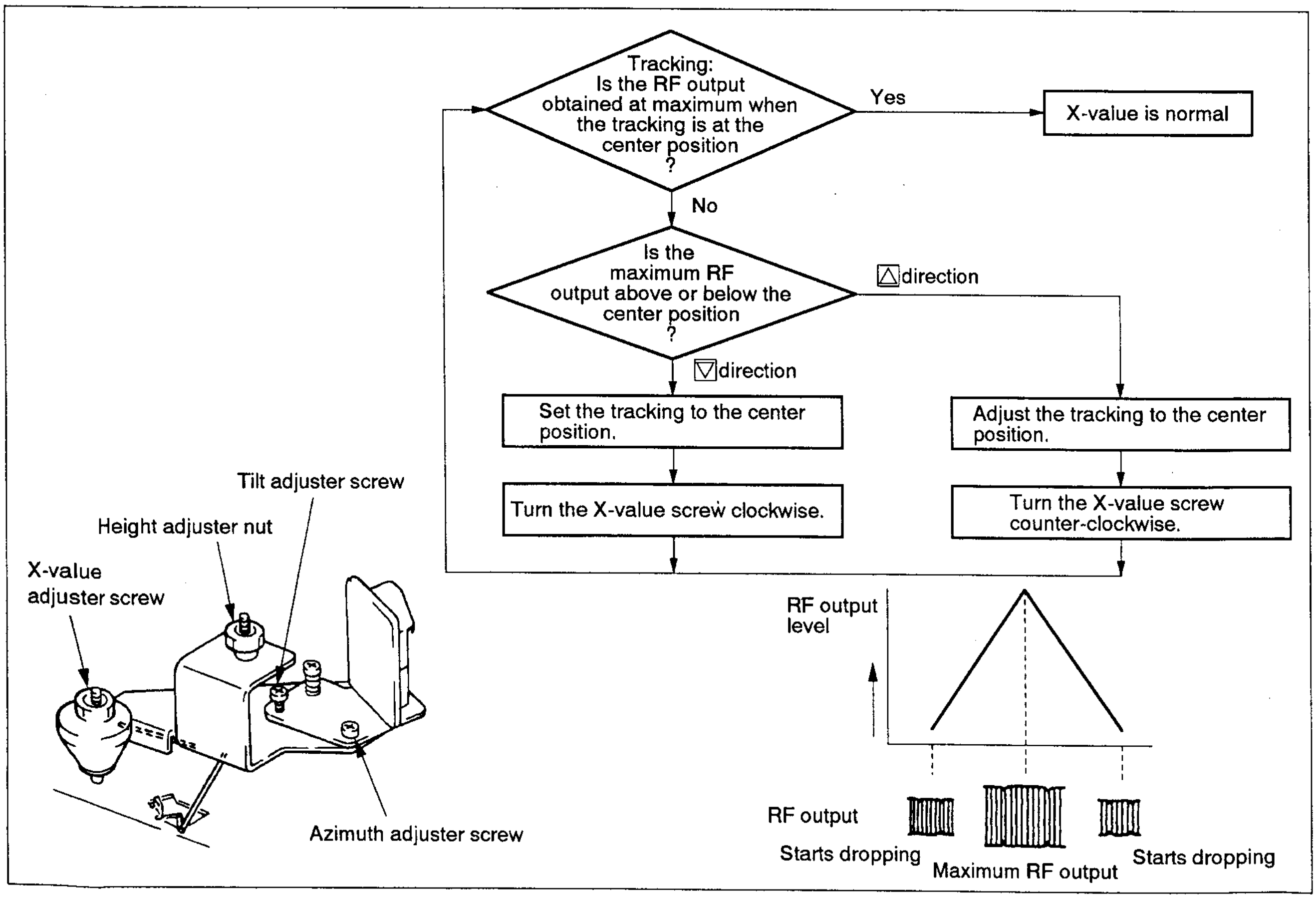

Tracking:
Is the RF output obtained at maximum when the tracking is at the center position ?
Yes
X-value is normal
No
Is the maximum RF output above or below the center position ?
△direction
▽direction
Set the tracking to the center position.
Turn the X-value screw clockwise.
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Tilt adjuster screw
Height adjuster nut
X-value adjuster screw
Azimuth adjuster screw
RF output level
RF output
Starts dropping
Maximum RF output
Starts dropping

Fig. 4-7

- **Adjustment by alignment tape**

Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective ▽ and △ buttons while the tracking is set at the center position.

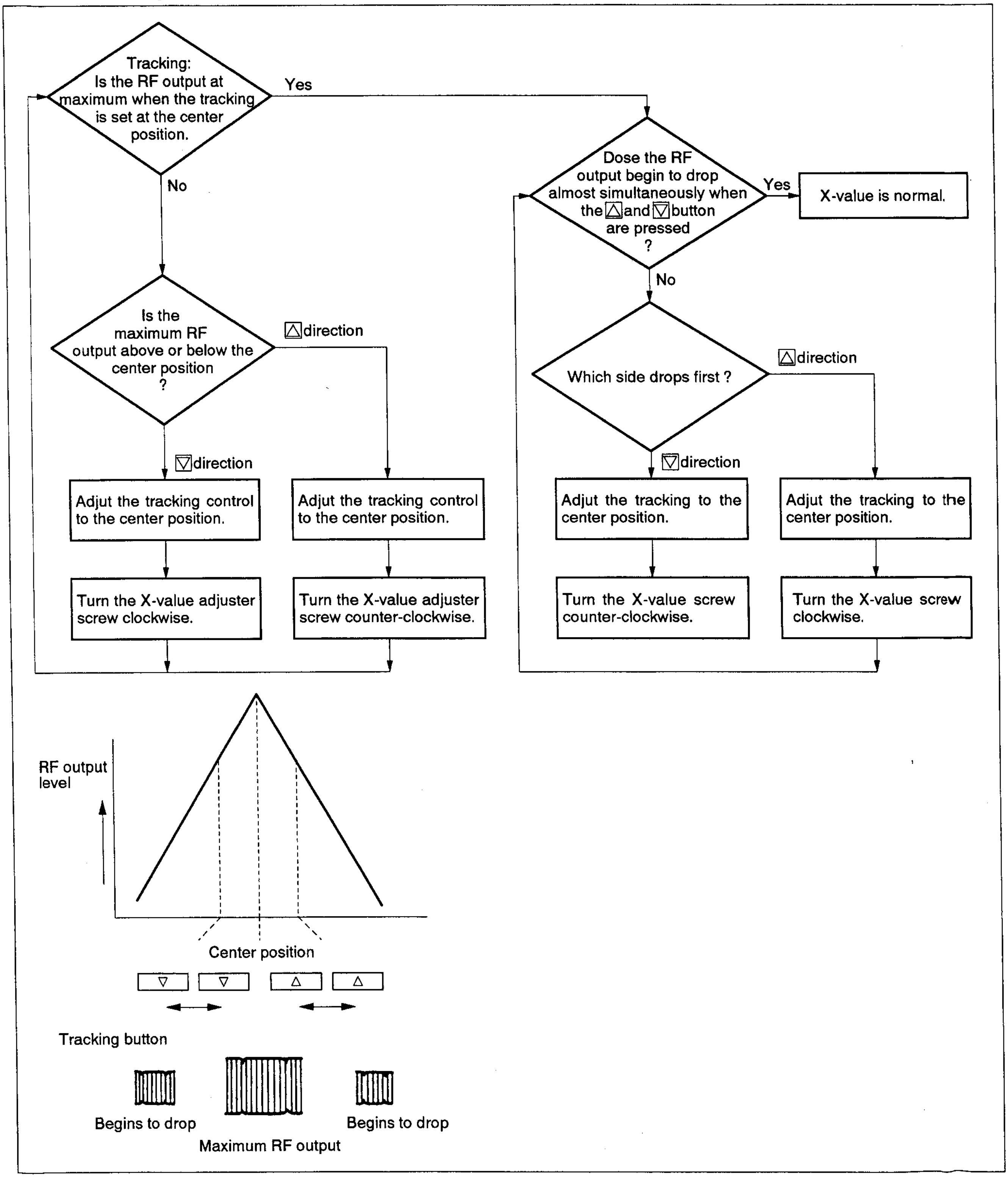

Tracking: Is the RF output at maximum when the tracking is set at the center position.
Yes
No
Dose the RF output begin to drop almost simultaneously when the △ and ▽ button are pressed ?
Yes
X-value is normal.
No
Is the maximum RF output above or below the center position ?
△direction
▽direction
Which side drops first ?
△direction
▽direction
Adjut the tracking control to the center position.
Adjut the tracking control to the center position.
Adjut the tracking to the center position.
Adjut the tracking to the center position.
Turn the X-value adjuster screw clockwise.
Turn the X-value adjuster screw counter-clockwise.
Turn the X-value screw counter-clockwise.
Turn the X-value screw clockwise.
RF output level
Center position
▽ ▽ △ △
Tracking button
Begins to drop
Maximum RF output
Begins to drop

Fig. 4-8

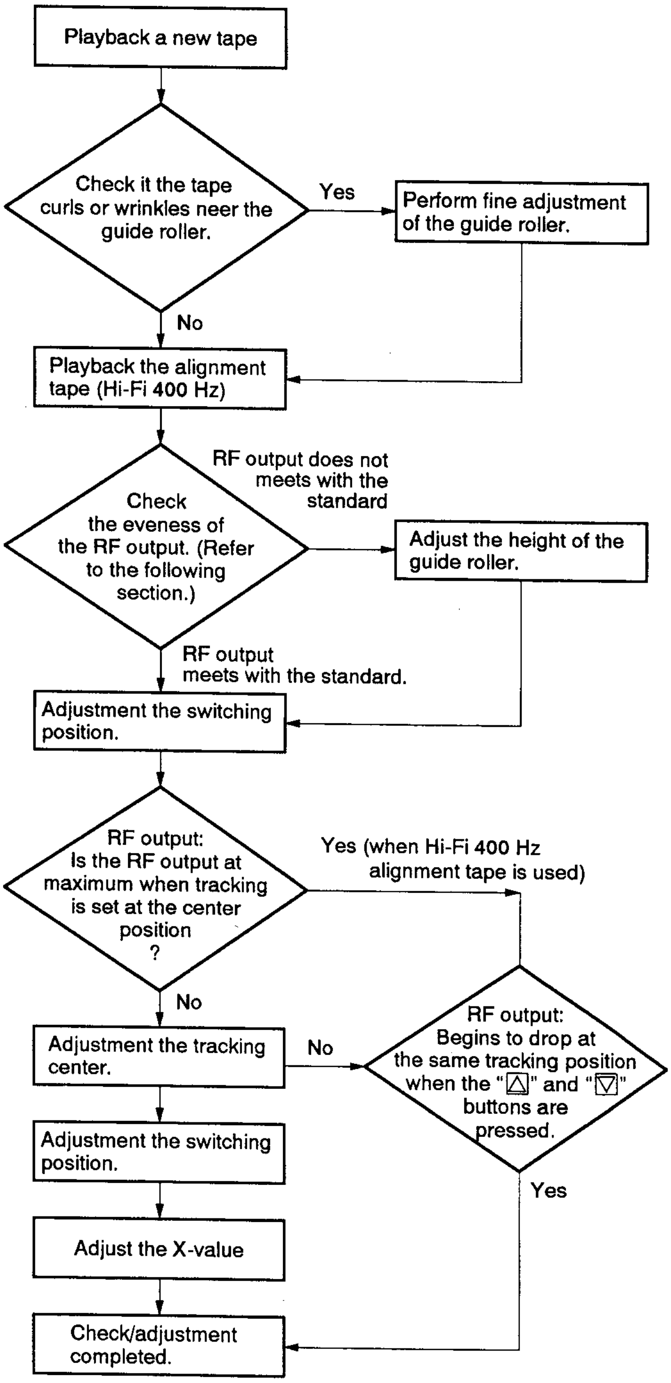
4-1-7. ADJUSTMENTS AFTER REPLACING THE DRUM (VIDEO HEAD)

Purpose: Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution: Turn off the auto tracking and set the manual tracking mode.

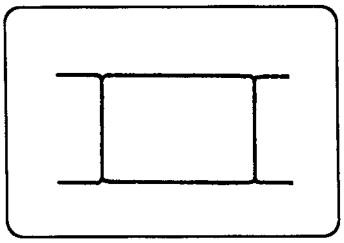
Mode	Playback
Signal	Alignment tape, blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-2, 4-1-3.) Switching position, Tracking preset, SP delay mono-multi (Refer to the Service Manual), X-value. (refer to 4-1-6.)

[Adjustment Method]

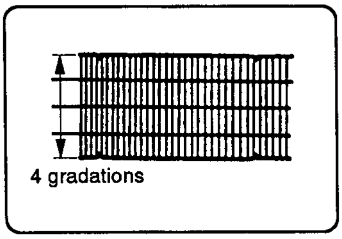

Playback a new tape
Check it the tape curls or wrinkles neer the guide roller.
Yes
Perform fine adjustment of the guide roller.
No
Playback the alignment tape (Hi-Fi 400 Hz)
Check the eveness of the RF output. (Refer to the following section.)
RF output does not meets with the standard
Adjust the height of the guide roller.
RF output meets with the standard.
Adjustment the switching position.
RF output: Is the RF output at maximum when tracking is set at the center position ?
Yes (when Hi-Fi 400 Hz alignment tape is used)
No
Adjustment the tracking center.
No
RF output: Begins to drop at the same tracking position when the "△" and "▽" buttons are pressed.
Yes
Adjustment the switching position.
Adjust the X-value
Check/adjustment completed.

[Checking the evenness and fluctuation of the RF output]

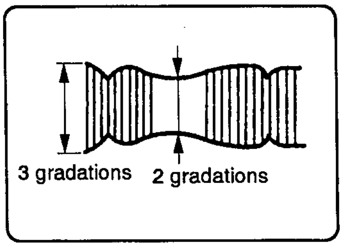
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-8. CHECKING THE TENSION AND TORQUE

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.
If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adaptor

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170 g•cm or more
Review torque	Review	Supply reel	180 ± 30 g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	95 ± 25 g•cm (using the torque cassette)
Back tension torque	Playback	Take-up reel	33 to 44 g•cm (using the torque cassette)

[Check Method]

Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

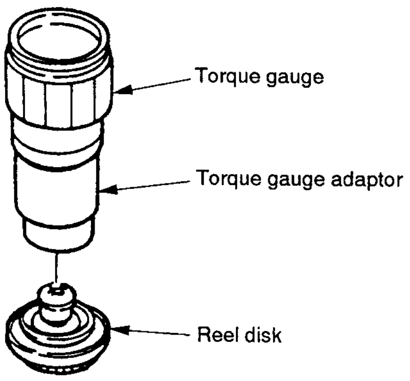
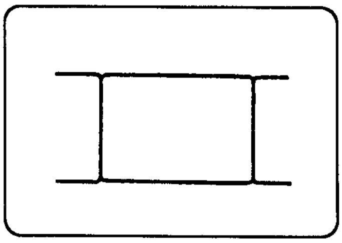


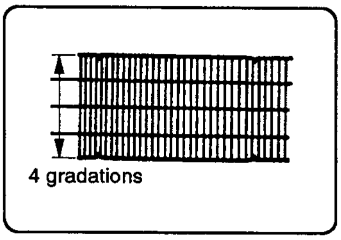
Fig. 4-9

[Checking the evenness and fluctuation of the RF output]

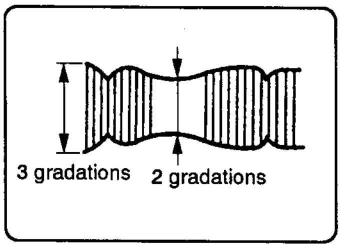
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-8. CHECKING THE TENSION AND TORQUE

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.

If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adaptor

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170 g•cm or more
Review torque	Review	Supply reel	180 ± 30 g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	95 ± 25 g•cm (using the torque cassette)
Back tension torque	Playback	Take-up reel	33 to 44 g•cm (using the torque cassette)

[Check Method]

Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

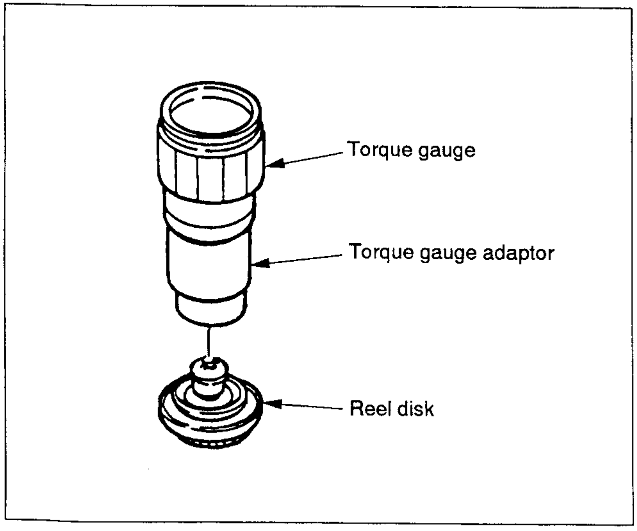
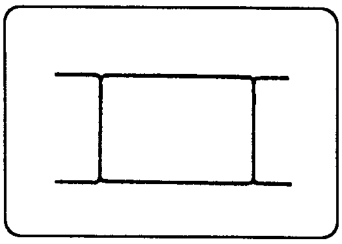


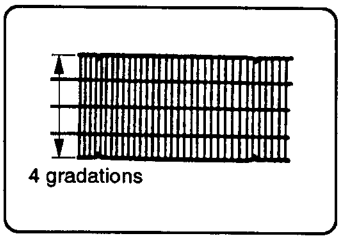
Fig. 4-9

[Checking the evenness and fluctuation of the RF output]

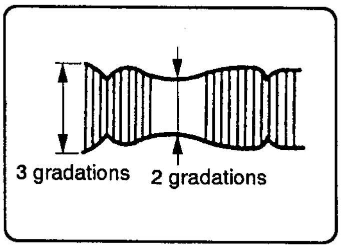
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-8. CHECKING THE TENSION AND TORQUE

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.
If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adaptor

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170 g•cm or more
Review torque	Review	Supply reel	180 ± 30 g•cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	95 ± 25 g•cm (using the torque cassette)
Back tension torque	Playback	Take-up reel	33 to 44 g•cm (using the torque cassette)

[Check Method]

Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

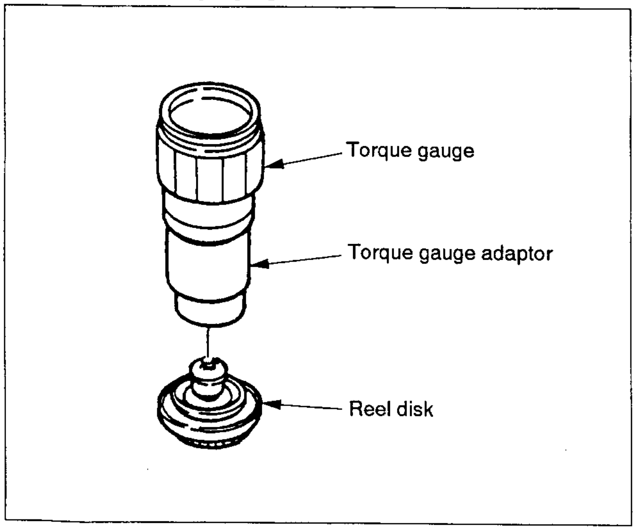


Fig. 4-9

VHS MECHANICAL ADJUSTMENT MANUAL IV

SONY®

SERVICE MANUAL

H MECHANISM

SUPPLEMENT-1

1. How to Use the Mode Selector Ⅱ for Adjusting H Type Mechanism Assembly.

2. Adjusting Mechanism Using New Alignment Tape (KRV-52NE For NTSC).

File this supplement with the VHS mechanical adjustment Ⅳ.

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MICROFILM

1. HOW TO USE THE MODE SELECTOR Ⅱ FOR ADJUSTING H TYPE MECHANISM ASSEMBLY

1-1. OUTLINE

To activate the VHS system H type mechanism assembly using mode selector Ⅱ (J-6082-282-A), use connector conversion jig (J-6090-052-A). By using the connector conversion jig, the following operations are possible.

- Loading and unloading action by the loading motor
- Reading of the current setting of the mode switch
- Normal and reverse rotation of the capstan motor

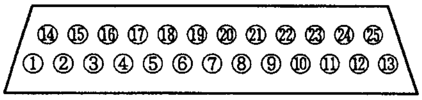
1-2. PREPARATION

1-2-1. ADDITION OF POWER SUPPLY CABLE (Already added Mode Selector Ⅱ also available)

In order to drive the capstan motor, the power +5 V and +12 V are supplied from the Mode Selector Ⅱ. Disassemble the D-SUB connector of the Mode Selector cable, then solder the following three places.

Supplied 3-pin cable	DSUB connector of the mode selector Ⅱ	Voltage
Pin 1 (Red index)	Pin 20	+12 V
Pin 2	Pin 25	GND
Pin 3	Pin 24	+5 V

- Connector pin number assignment of the DSUB connector (From the soldering side)



- When connections are made, check that +5 V and +12 V are available at the 3-pin cable connector.

1-2-2. CHECKING THE SOFTWARE VERSION

Turn on the power of the mode selector II.

If the reading for the software version on the mode selector II is not 1.10 or higher, replace the New ROM (J-6082-314-A).

1-3. CONNECTION

1-3-1. CONNECTION BETWEEN THE CONNECTOR CONVERSION JIG AND THE MODE SELECTOR Ⅱ (See Fig. 1-1)

Insert the connectors of the two 6-pin cables (one is white and the other is black) and the 3-pin cable from the mode selector Ⅱ to the corresponding connectors on the connector conversion jig (J-6090-052-A).

1-3-2. CONNECTION BETWEEN THE CONNECTOR CONVERSION JIG AND THE H TYPE MECHANISM ASSEMBLY

With the power of the mode selector Ⅱ turned off, insert the following three connectors to the corresponding connectors on the H type mechanism assembly.

- 3-pin connector for the loading motor
- 5-pin connector for the mode switch
- 8-pin connector for the capstan motor

Set the speed control for the minimum setting (fully counterclockwise).

1-4. OPERATION

1-4-1. OPERATION OF THE LOADING MOTOR ON THE H TYPE MECHANISM ASSEMBLY

(1) Select the H type mechanism assembly setting on the mode selector Ⅱ .

(2) After this, procedures are the same as those for the previous model types.
For the operating method, see pages 3 to 5 of "8 mm Video Mechanism Manual Ⅵ (TK Mechanism) Supplement-1".
For the loading method, see page 3 of "VHS Mechanical Adjustment Manual Ⅳ (H Mechanism)".

1-4-2. OPERATION OF THE CAPSTAN MOTOR ON THE H TYPE MECHANISM ASSEMBLY

(1) For the loading motor operation under Section 1-4-1, change the mode setting to the FF/REW mode with the mode switch.

(2) Turn the speed control gradually in clockwise direction, and the capstan motor starts rotating. To turn the capstan motor in desired rotating direction, change the FWD/RVS setting of the rotating direction switch.

1-5. PRECAUTIONS

- Turn the speed control only when necessary. Otherwise, hold the speed control turned at fully counterclockwise direction. If the power of the mode selector II is turned on with the speed control turned in clockwise direction, +12V power fails and the power of the mode selector II cannot be turned on.
- Although the connector conversion jig (J-6090-052-A) has rubber feet, do not make a short circuit on the bottom surface of the connector conversion jig via foreign conductive materials.

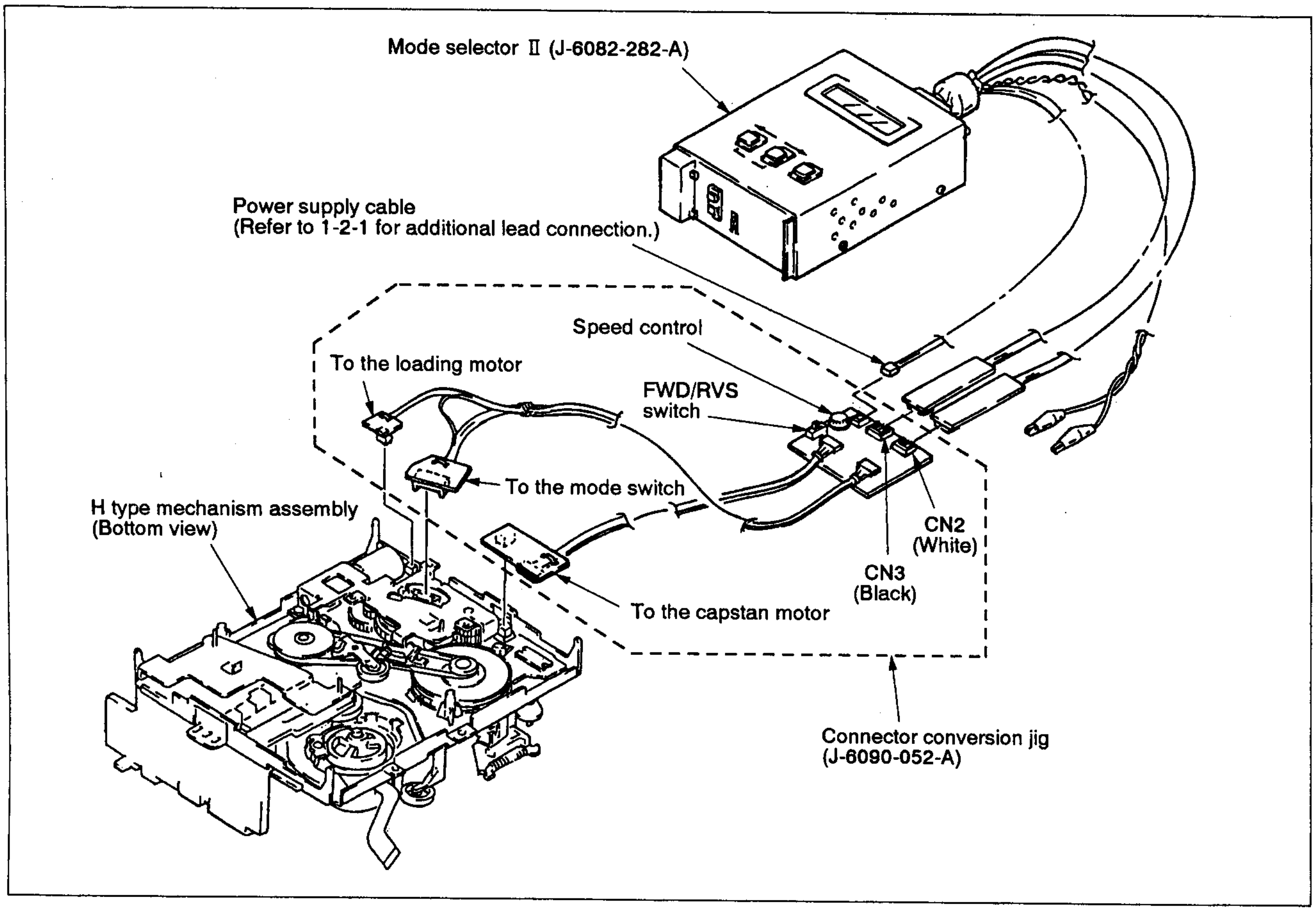

Mode selector Ⅱ (J-6082-282-A)
Power supply cable
(Refer to 1-2-1 for additional lead connection.)
Speed control
To the loading motor
FWD/RVS switch
To the mode switch
H type mechanism assembly
(Bottom view)
CN2
(White)
CN3
(Black)
To the capstan motor
Connector conversion jig
(J-6090-052-A)

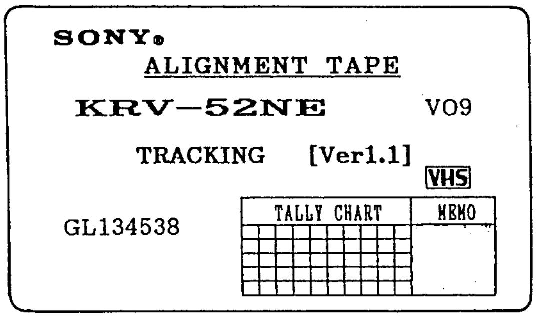
Fig. 1-1

2. ADJUSTING THE MECHANISM USING NEW ALIGNMENT TAPE (KRV-52NE for NTSC)

The conventional alignment tape (For NTSC) is now replaced with alignment tape KRV-52NE, and the following describes how to align the mechanism using the KRV-52NE. For details on the use of KRV-51N2 for each model, refer to the service manuals which will be issued in the future.

Name	Parts No.	Remarks
Alignment tape KRV-52NE for NTSC	8-192-605-41	For tape path, audio azimuth, and X-value adjustments
Alignment tape KRV-51N2 for NTSC	8-192-605-32	For electrical adjustments (RF, AF, and switching position) and operation check

Note: The KRV-52NE has or does not have Ver No. depending on new or old type as shown below. (New one has Ver No.)
Note that an adjusting method of X-value is different.


SONY®
ALIGNMENT TAPE
KRV–52NE V09
TRACKING [Ver1.1]
VHS
GL134538

TALLY CHART	MEMO

Contents:
KRV-52NE (NTSC)

Time	Video	Audio
20 min.	Recording only at 1 MHz, A-ch. EP mode RF skipping once per 5 frames	5 kHz full tracks

KRV-51N2 (NTSC)

Class	Mode	Time	Video	Audio (HIFI/Normal)
1	SP	7 min.	Color bar	400 Hz
2	SP	3 min.	Mono. scope	400 Hz
3	EP	7 min.	Color bar	400 Hz
4	EP	3 min.	Mono. scope	400 Hz

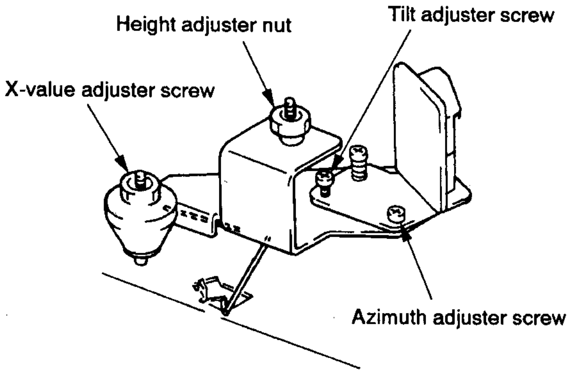
2-1. ADJUSTMENT USING ALIGNMENT TAPE (KRV-52NE for NTSC having no version No.)

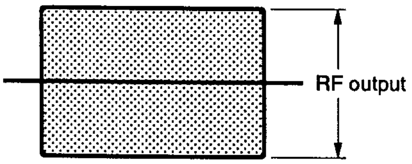
2-1-1. X-VALUE ADJUSTMENT (Using the tape having no version No.)

Purpose: To obtain compatibility with other VCRs.

Precaution: Before starting to adjust X-value, set the tracking control at the center position. To set the tracking control at the center position for the VCRs equipped with the ▲ and ▼ tracking control keys, press both the ▲ and ▼ tracking control keys at the same time. For the VCRs not equipped with the tracking control keys, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).

Mode	Playback
Signal	Alignment tape KRV-52NE (For NTSC having no version No.)
Measuring instrument	Oscilloscope TIM/DIV: 2ms Trigger source: CH2 Trigger slope: +
Measuring point	CH-1: Connector PB RF pin for RF PC board check CH-2: Connector RF SWP pin for RF PC board check
Adjustment locations	X-value adjuster screw

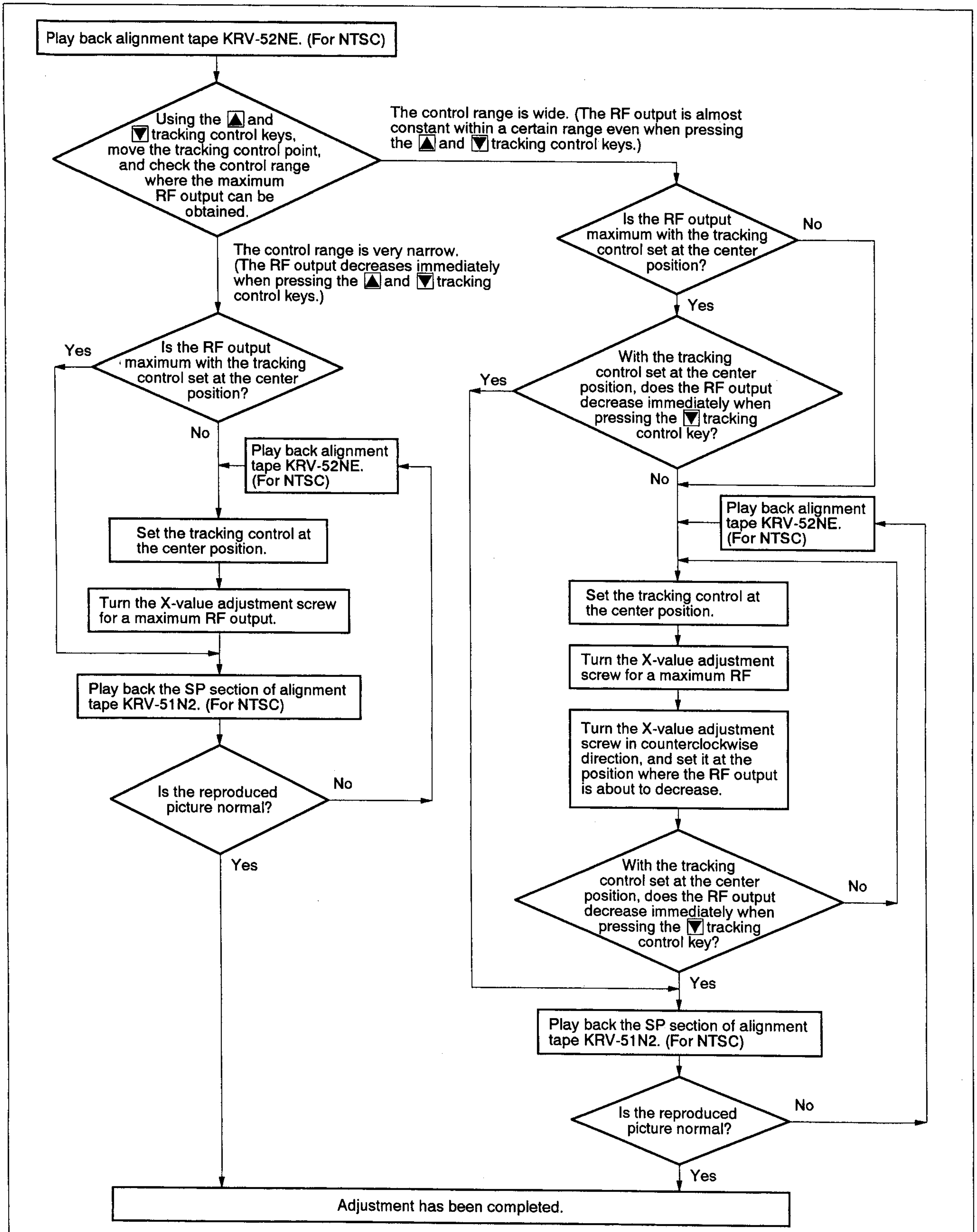




RF output shall be maximum at the center position of the tracking control.

[Adjustment Method]
Set the tracking control at the center position. For the VCRs equipped with narrow gap video heads, set the X-value adjustment screw where a maximum RF output is obtained. For the VCRs equipped with wide gap video heads, set the X-value adjustment screw both where a maximum RF output is obtained and where the RF output decreases immediately when the ▼ tracking control key is pressed.

X-VALUE ADJUSTMENT (Using the tape having no version No.)


Play back alignment tape KRV-52NE. (For NTSC)
Using the ▲ and ▼ tracking control keys, move the tracking control point, and check the control range where the maximum RF output can be obtained.
The control range is wide. (The RF output is almost constant within a certain range even when pressing the ▲ and ▼ tracking control keys.)
The control range is very narrow. (The RF output decreases immediately when pressing the ▲ and ▼ tracking control keys.)
Is the RF output maximum with the tracking control set at the center position?
Yes
No
Play back alignment tape KRV-52NE. (For NTSC)
Set the tracking control at the center position.
Turn the X-value adjustment screw for a maximum RF output.
Play back the SP section of alignment tape KRV-51N2. (For NTSC)
Is the reproduced picture normal?
No
Yes
Is the RF output maximum with the tracking control set at the center position?
No
Yes
With the tracking control set at the center position, does the RF output decrease immediately when pressing the ▼ tracking control key?
Yes
No
Play back alignment tape KRV-52NE. (For NTSC)
Set the tracking control at the center position.
Turn the X-value adjustment screw for a maximum RF
Turn the X-value adjustment screw in counterclockwise direction, and set it at the position where the RF output is about to decrease.
With the tracking control set at the center position, does the RF output decrease immediately when pressing the ▼ tracking control key?
No
Yes
Play back the SP section of alignment tape KRV-51N2. (For NTSC)
Is the reproduced picture normal?
No
Yes
Adjustment has been completed.

When adjustment is complete, adjust the height of No. 3 and No. 6 guide rollers on page 10.

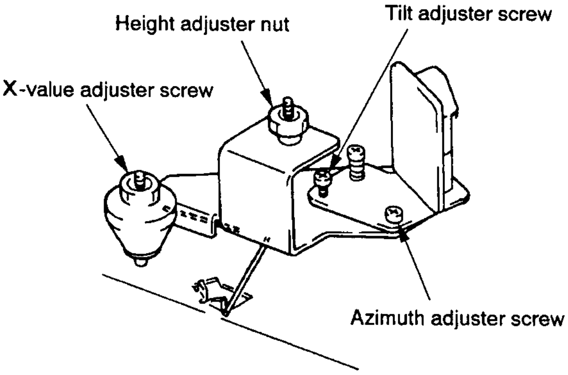
2-2. ADJUSTMENT USING ALIGNMENT TAPE (KRV-52NE for NTSC having the version No.)

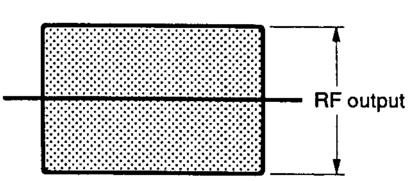
2-2-1. X-VALUE ADJUSTMENT (Using the tape having the version No.)

Purpose: To obtain compatibility with other VCRs.

Precaution: Before starting to adjust X-value, set the tracking control at the center position. To set the tracking control at the center position for the VCRs equipped with the ▲ and ▼ tracking control keys, press both the ▲ and ▼ tracking control keys at the same time. For the VCRs not equipped with the tracking control keys, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).

Mode	Playback
Signal	Alignment tape KRV-52NE (For NTSC having the version No.)
Measuring instrument	Oscilloscope TIM/DIV: 2ms Trigger source: CH2 Trigger slope: +
Measuring point	CH-1: Connector PB RF pin for RF PC board check CH-2: Connector RF SWP pin for RF PC board check
Adjustment locations	X-value adjuster screw



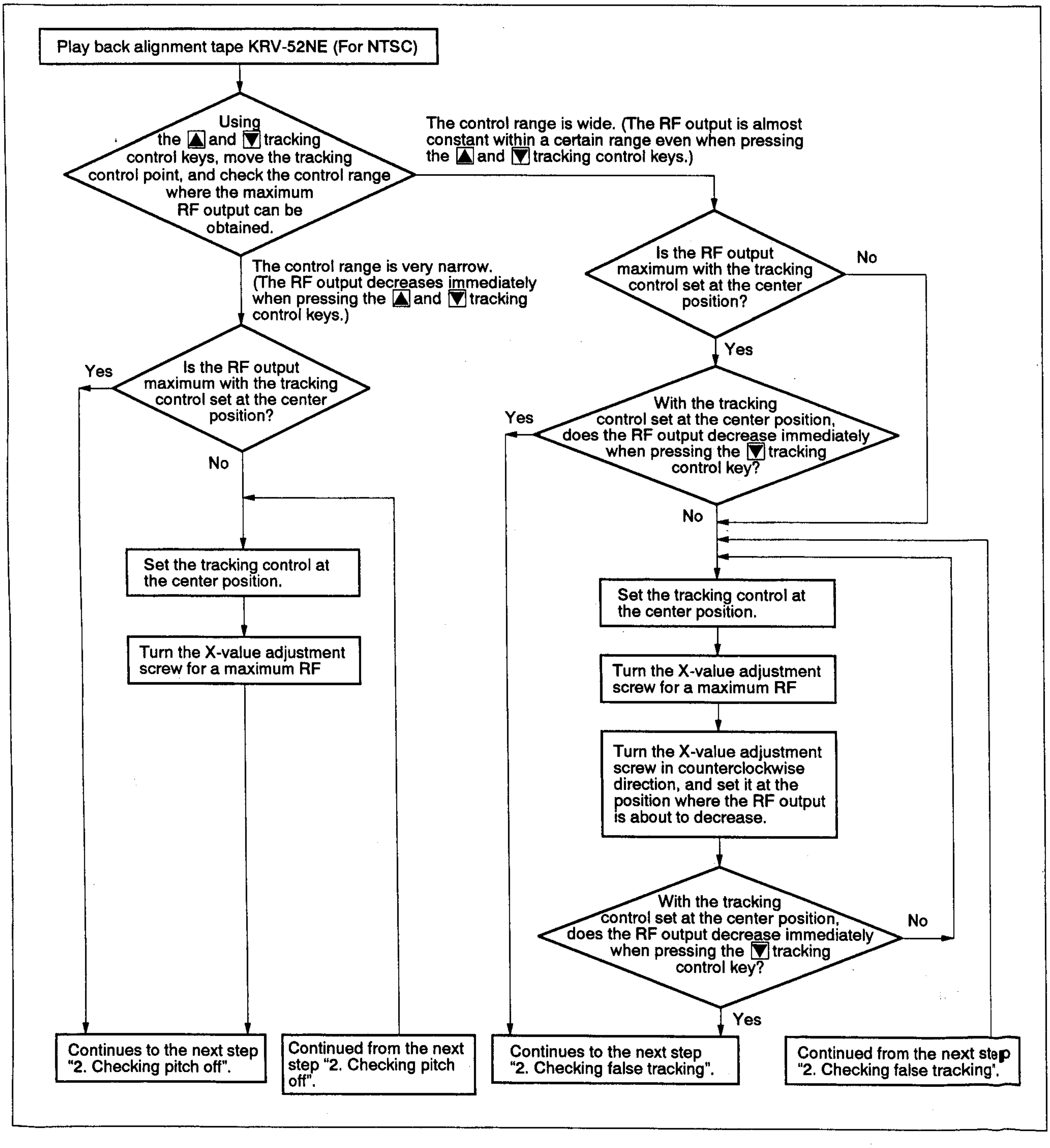


RF output shall be maximum at the center position of the tracking control.

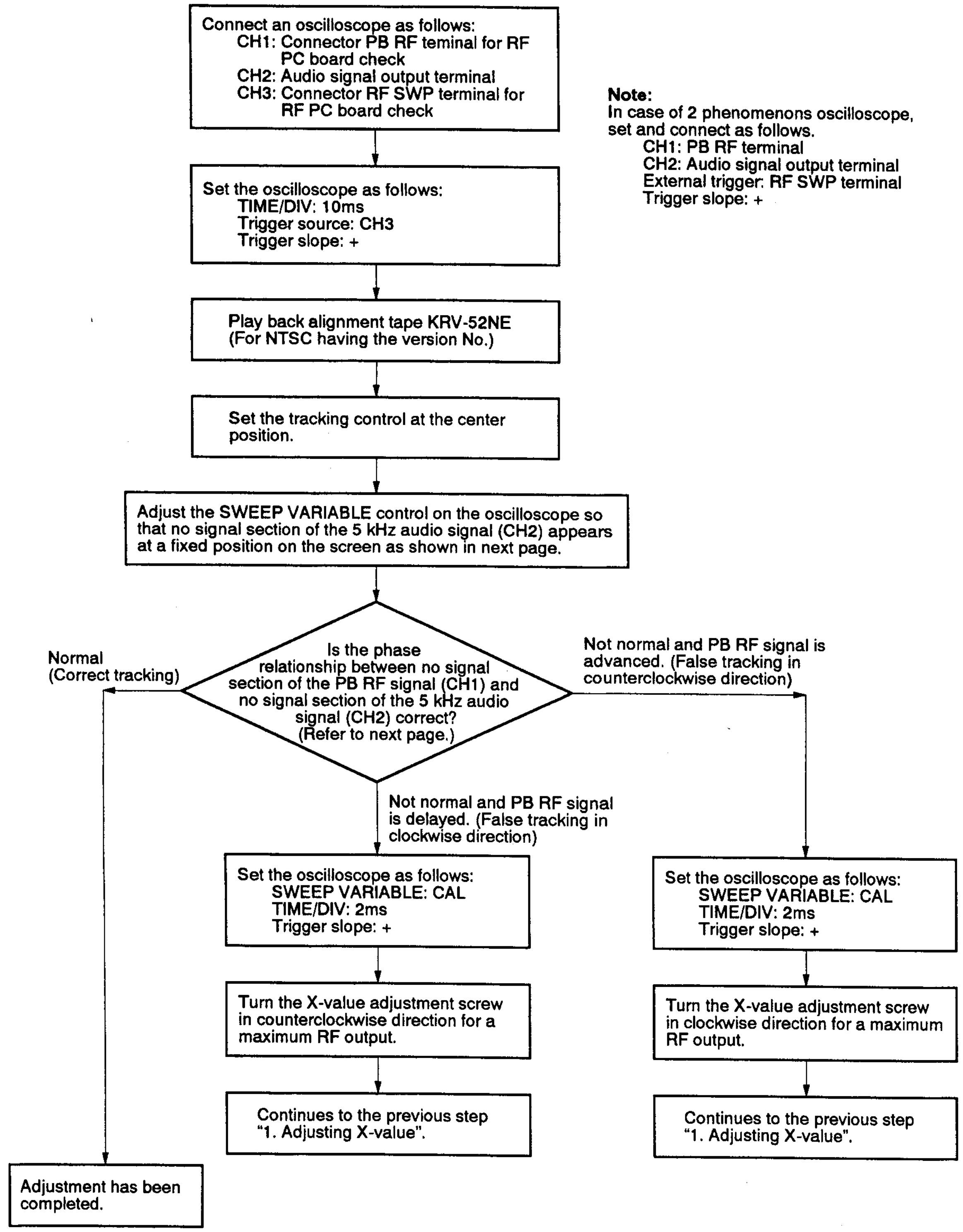
[Adjustment Method]

Set the tracking control at the center position. For the VCRs equipped with narrow gap video heads, set the X-value adjustment screw where a maximum RF output is obtained. For the VCRs equipped with wide gap video heads, set the X-value adjustment screw both where a maximum RF output is obtained and where the RF output decreases immediately when the ▼ tracking control key is pressed.

1. Adjusting X-value (Using the tape having the version No.)


Play back alignment tape KRV-52NE (For NTSC)
Using the ▲ and ▼ tracking control keys, move the tracking control point, and check the control range where the maximum RF output can be obtained.
The control range is wide. (The RF output is almost constant within a certain range even when pressing the ▲ and ▼ tracking control keys.)
The control range is very narrow. (The RF output decreases immediately when pressing the ▲ and ▼ tracking control keys.)
Is the RF output maximum with the tracking control set at the center position?
Yes
No
Set the tracking control at the center position.
Turn the X-value adjustment screw for a maximum RF
Continues to the next step "2. Checking pitch off".
Continued from the next step "2. Checking pitch off".
Is the RF output maximum with the tracking control set at the center position?
No
Yes
With the tracking control set at the center position, does the RF output decrease immediately when pressing the ▼ tracking control key?
Yes
No
Set the tracking control at the center position.
Turn the X-value adjustment screw for a maximum RF
Turn the X-value adjustment screw in counterclockwise direction, and set it at the position where the RF output is about to decrease.
With the tracking control set at the center position, does the RF output decrease immediately when pressing the ▼ tracking control key?
No
Yes
Continues to the next step "2. Checking false tracking".
Continued from the next step "2. Checking false tracking".

2. Checking false tracking (Using the tape having the version No.)



Connect an oscilloscope as follows:
CH1: Connector PB RF teminal for RF PC board check
CH2: Audio signal output terminal
CH3: Connector RF SWP terminal for RF PC board check

Set the oscilloscope as follows:
TIME/DIV: 10ms
Trigger source: CH3
Trigger slope: +

Play back alignment tape KRV-52NE (For NTSC having the version No.)

Set the tracking control at the center position.

Adjust the SWEEP VARIABLE control on the oscilloscope so that no signal section of the 5 kHz audio signal (CH2) appears at a fixed position on the screen as shown in next page.

Is the phase relationship between no signal section of the PB RF signal (CH1) and no signal section of the 5 kHz audio signal (CH2) correct? (Refer to next page.)

Normal (Correct tracking)

Adjustment has been completed.

Not normal and PB RF signal is delayed. (False tracking in clockwise direction)

Set the oscilloscope as follows:
SWEEP VARIABLE: CAL
TIME/DIV: 2ms
Trigger slope: +

Turn the X-value adjustment screw in counterclockwise direction for a maximum RF output.

Continues to the previous step "1. Adjusting X-value".

Not normal and PB RF signal is advanced. (False tracking in counterclockwise direction)

Set the oscilloscope as follows:
SWEEP VARIABLE: CAL
TIME/DIV: 2ms
Trigger slope: +

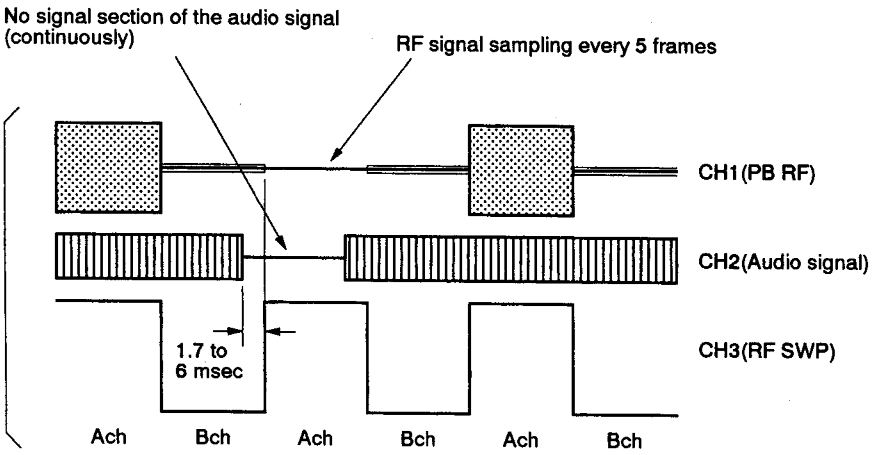
Turn the X-value adjustment screw in clockwise direction for a maximum RF output.

Continues to the previous step "1. Adjusting X-value".

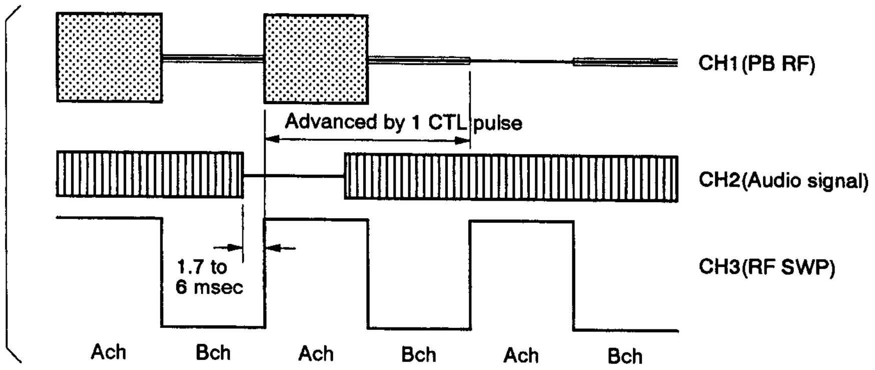
Note:
In case of 2 phenomenons oscilloscope, set and connect as follows.
CH1: PB RF terminal
CH2: Audio signal output terminal
External trigger: RF SWP terminal
Trigger slope: +

Using the tape having the version No.

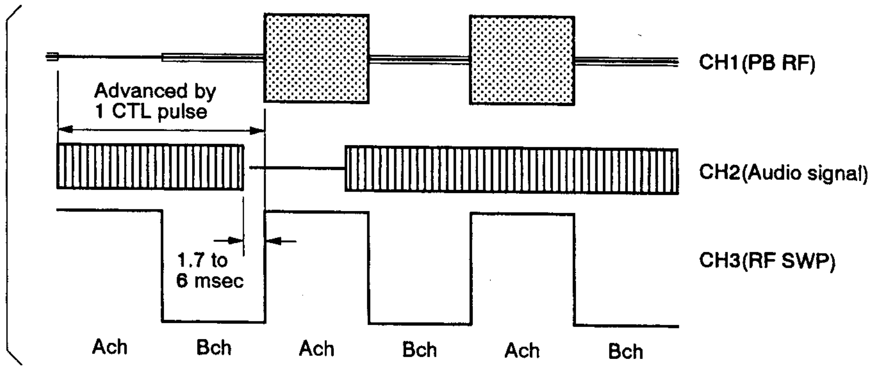
Normal tracking


No signal section of the audio signal (continuously)
RF signal sampling every 5 frames
CH1 (PB RF)
CH2(Audio signal)
CH3(RF SWP)
1.7 to 6 msec
Ach
Bch
Ach
Bch
Ach
Bch

False tracking delayed by 1 CTL pulse (in clockwise direction)


CH1 (PB RF)
Advanced by 1 CTL pulse
CH2(Audio signal)
CH3(RF SWP)
1.7 to 6 msec
Ach
Bch
Ach
Bch
Ach
Bch

False tracking advanced by 1 CTL pulse (in counterclockwise direction)


CH1 (PB RF)
Advanced by 1 CTL pulse
CH2(Audio signal)
CH3(RF SWP)
1.7 to 6 msec
Ach
Bch
Ach
Bch
Ach
Bch

2-3. ADJUSTING THE MECHANISM USING ALIGNMENT TAPE (KRV-52NE for NTSC)

2-3-1. HEIGHT ADJUSTMENT OF GUIDE ROLLERS NO. 3 AND NO. 6

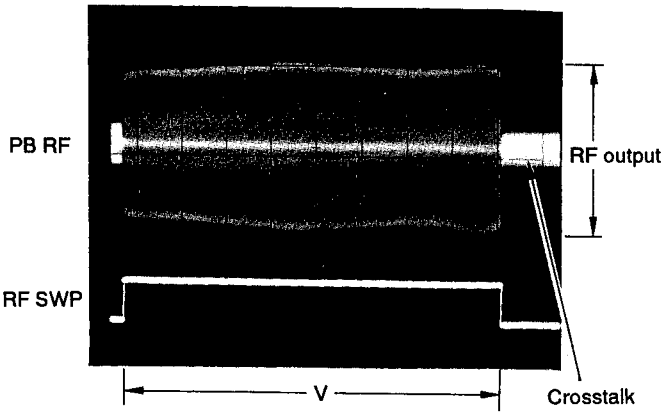
Mode	Playback
Signal	Alignment tape KRV-52NE (For NTSC)
Measuring instrument	Oscilloscope TIM/DIV: 2ms Trigger source: CH2 Trigger slope: +
Measuring point	CH-1: Connector PB RF pin for RF PC board check CH-2: Connector RF SWP pin for RF PC board check
Adjustment locations	Height adjustment screw for No.3 tape guide roller Height adjustment screw for No.6 tape guide roller

[Adjustment Method]

The following adjustment shall be carried out after completed Section 2-1-1 "X-value adjustment and check".

1) Deactivate the automatic tracking control, and set the tracking control at the center position. To set the tracking control at the center position for the VCRs equipped with the ▲ and ▼ tracking control keys, press both the ▲ and ▼ tracking control keys at the same time. For the VCRs not equipped with the tracking control keys, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).

2) Check if the RF output changes in amplitude by pressing the tracking control key. The RF output should change periodically (changes from a minimum amplitude to a maximum amplitude, and to the minimum amplitude again).

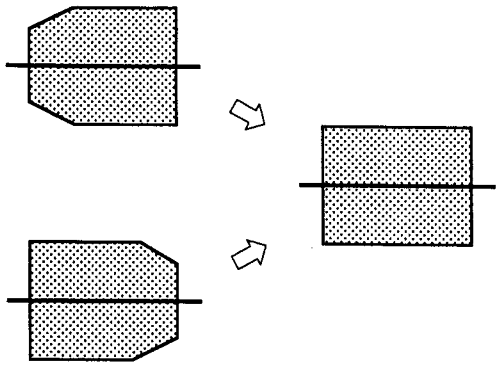


3) Turn the height adjustment screws of tape guide rollers No.3 and No.6 so that the RF output envelope becomes as flat as possible.

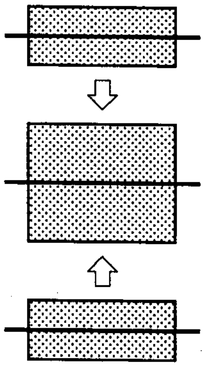
4) Press the ▲ tracking control key, and check that both the beginning and end of the RF output change together the same in amplitude.

5) Press the ▼ tracking control key, and check that both the beginning and end of the RF output change together the same in amplitude.

Turn the height adjustment screws of tape guide rollers No.3 and No.6 little by little so that the RF output envelope becomes as flat as possible.



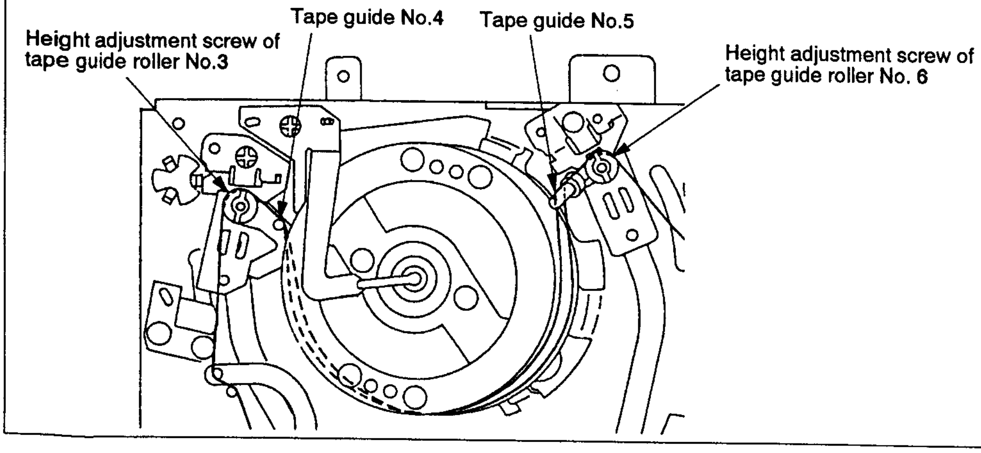
Press the ▼ tracking control key, then the ▼ tracking control key, and check that both the beginning and end of the RF output change together the same in amplitude.



When the ▲ tracking control key is pressed.

At the tracking center position.

When the ▼ tracking control key is pressed.


Height adjustment screw of tape guide roller No.3
Tape guide No.4
Tape guide No.5
Height adjustment screw of tape guide roller No. 6

2-3-2. ACE HEAD ASSEMBLY ADJUSTMENT (ROUGH ADJUSTMENT) (Figs. 2-1 and 2-2)

Purpose: Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Jig	Blank tape
Adjustment locations	Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Mount the ACE head assembly. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or rise up noticeably near the ACE head.
4) If the tape curls up or rises noticeably, readjust the tilt adjuster screw and the height adjuster nut.
   (The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

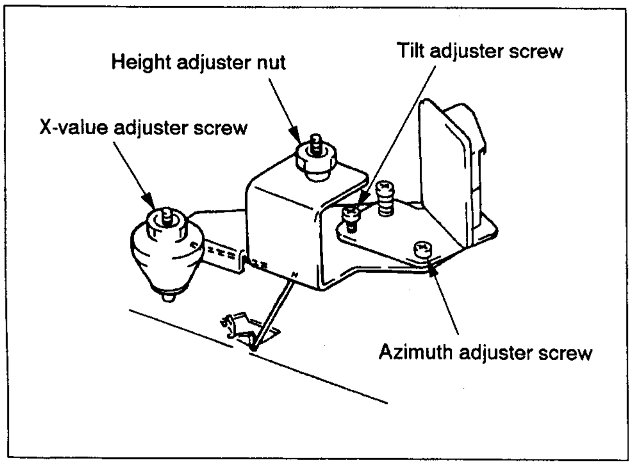


Fig. 2-1

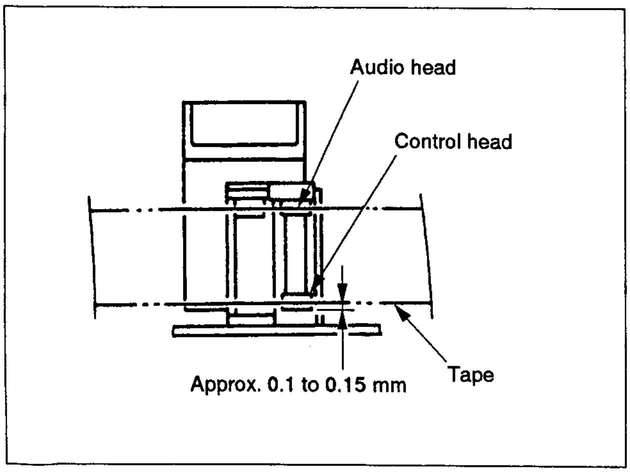


Fig. 2-2

2-3-3. ACE HEAD ASSEMBLY ADJUSTMENT (PRECISION ADJUSTMENT)

Mode	Playback
Signal	Alignment tape (KRV-52NE 5 kHz) (For NTSC)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw, Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or rise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

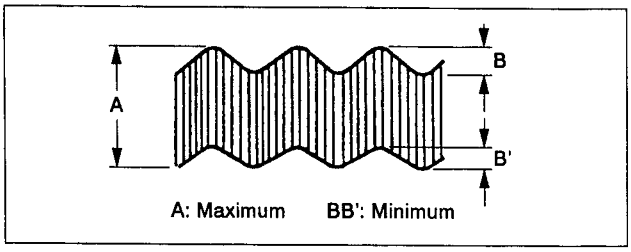


Fig. 2-3

2-3-4. ADJUSTMENTS AFTER REPLACING THE DRUM (VIDEO HEAD)

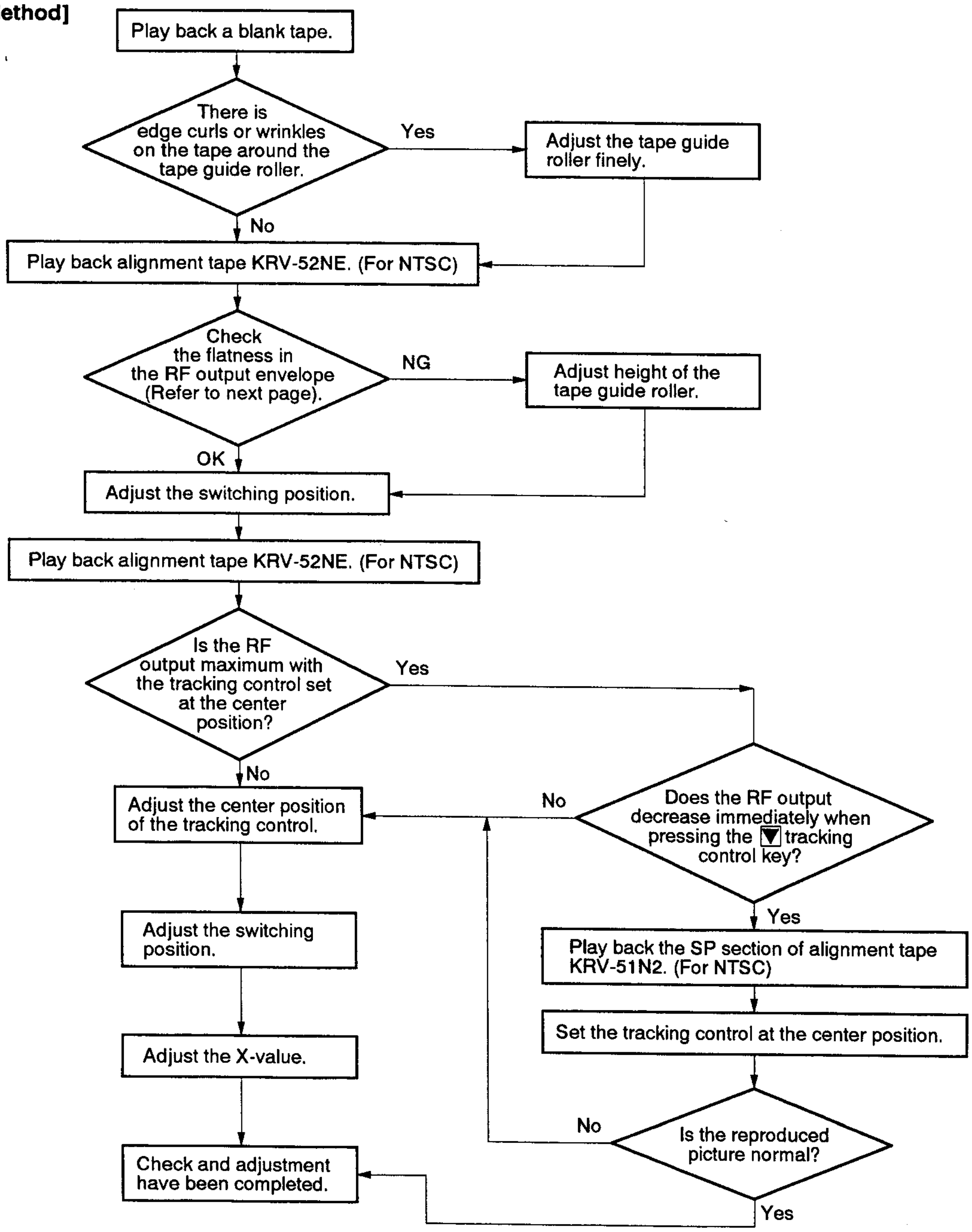
Purpose: Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Note 1: Deactivate the automatic tracking control for setting the mechanism in manual tracking control mode.

Note 2: To set the tracking control at the center position, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).

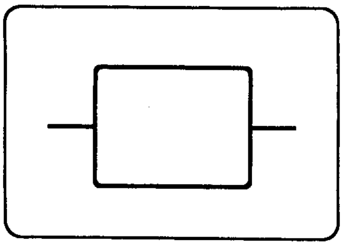
Mode	Playback
Signal	Alignment tape KRV-52NE (For NTSC), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SWP pin for RF PC board check.
Adjustment locations	Guide roller (Refer to 2-3-1.) Switching position (Refer to the Service Manual) X-value (Refer to 2-1-1, 2-1-2.)

[Adjustment Method]

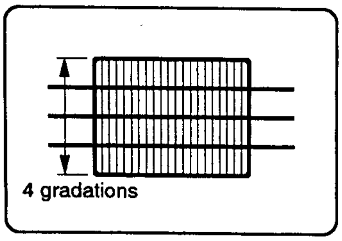

Play back a blank tape.
There is edge curls or wrinkles on the tape around the tape guide roller.
Yes
Adjust the tape guide roller finely.
No
Play back alignment tape KRV-52NE. (For NTSC)
Check the flatness in the RF output envelope (Refer to next page).
NG
Adjust height of the tape guide roller.
OK
Adjust the switching position.
Play back alignment tape KRV-52NE. (For NTSC)
Is the RF output maximum with the tracking control set at the center position?
Yes
No
Adjust the center position of the tracking control.
No
Does the RF output decrease immediately when pressing the ▼ tracking control key?
Yes
Adjust the switching position.
Play back the SP section of alignment tape KRV-51N2. (For NTSC)
Set the tracking control at the center position.
Adjust the X-value.
No
Is the reproduced picture normal?
Check and adjustment have been completed.
Yes

[Checking the evenness and fluctuation of the RF output]

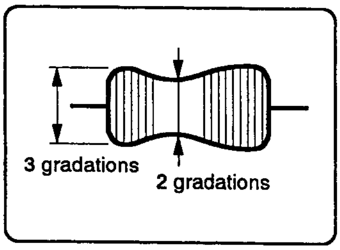
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

VHS MECHANICAL ADJUSTMENT MANUAL IV

SONY®
SERVICE MANUAL

H MECHANISM

SUPPLEMENT-2

File this supplement with the VHS mechanical adjustment IV and supplement-1.

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1. CORRECTION

In the VHS Mechanism Adjustment Manual IV (Supplement-1), an adjustment sequence was wrong, and it is corrected as follow;

1-1. Adjustment Sequence (VHS Mechanism Adjustment Manual IV (Supplement-1) Page 6 to 11)

(1) Adjustment of No. 3 and No. 6 guide roller height
Delete the "The following adjustment shall be carried out after completed Section 2-1-1 "X-value adjustment and check" under "Adjustment Method" on page 10.

(2) Adjustment of ACE head assembly

Note: In the adjustment of ACE head assembly (coarse adjustment and fine adjustment), if a azimuth, height and tilt were adjusted, again adjust the height of No. 3 and No. 6 guide rollers.

(3) Adjustment of X value

MICROFILM

2. MODIFICATION

2-1. CHANGING THE RECORDED CONTENTS OF ALIGNMENT TAPE

KRV-52NE (NTSC) (Ver. 1.2)

Time	Video	Audio
20 min.	Recording only at 1 MHz, A-ch. EP mode RF skipping once per 5 frames	5 kHz → 4 kHz full tracks

2-2. TG2 ROLLER, FE HEAD ASSEMBLY (Refer to VHS Mechanical Adjustment Manual IV page14)

- The TG2 roller is provided with either of two types, fixed or straight. For the fixed type, section 3-5 is added.

3-5. TG2 ROLLER, FE HEAD ASSEMBLY (Fig. 3-5)

1) Remove screw ① to pull out FE head assembly ②.

[Note on Mounting]

- Keep clean the surface contacts tape of TG2 roller.

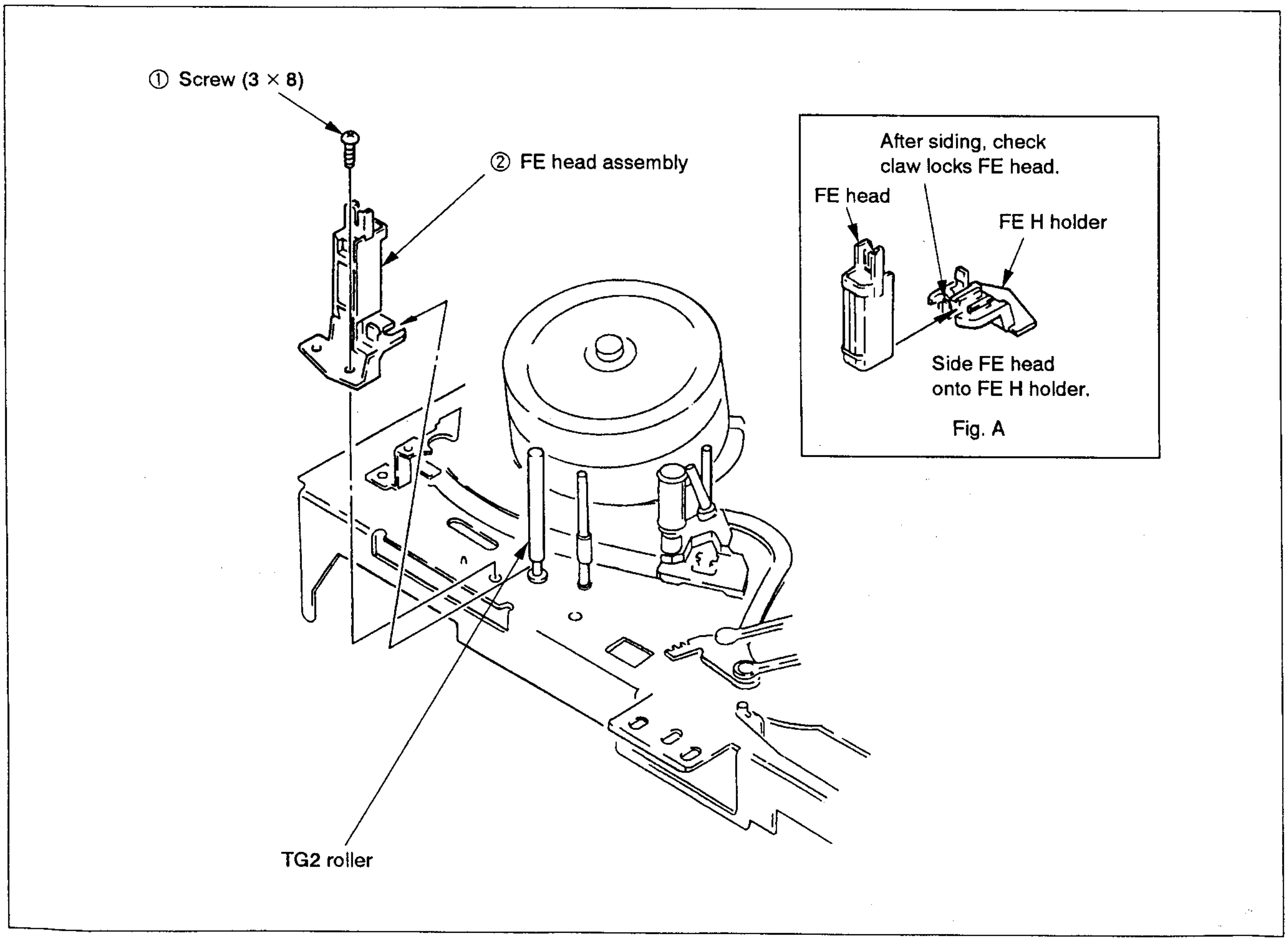

① Screw (3 × 8)
② FE head assembly
TG2 roller
After siding, check claw locks FE head.
FE head
FE H holder
Side FE head onto FE H holder.
Fig. A

Fig. 3-5

2-3. TG3, TG6 GUIDE ROLLER ASSEMBLIES (Refer to VHS Mechanical Adjustment Manual Ⅳ page 17)

- There is another type in TG3 and TG6 guide roller assemblies, which is not attached with a screw (B2X3). For the screwless type, section 3-8 is added.

3-8. TG3, TG6 GUIDE ROLLER ASSEMBLIES (Fig. 3-8)

1) TG3 guide roller assembly ① by turning it in arrow Ⓐ direction.
2) Removal the spring ②.
3) TG6 guide roller assembly ③ by turning it in arrow Ⓑ direction.
4) Removal the spring ④.

[Note on Mounting]

- Keep clean the surface contacts tape of TG3 and TG6 guide roller assemblies ①, ③.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

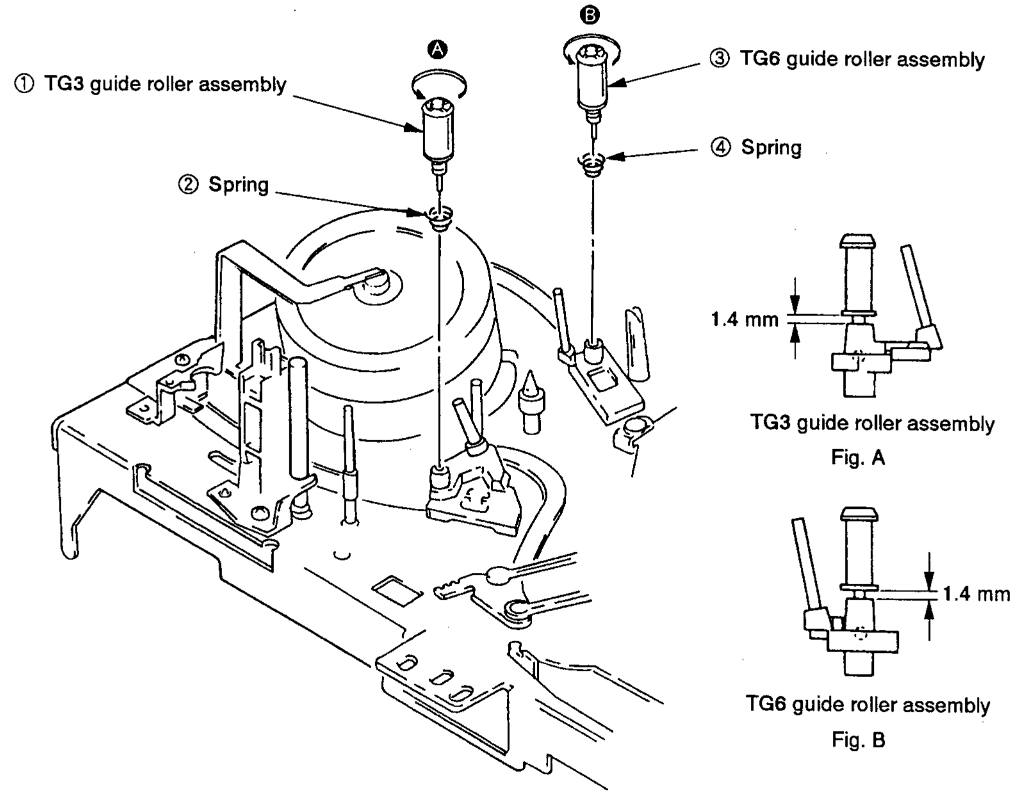

Ⓑ
Ⓐ
③ TG6 guide roller assembly
① TG3 guide roller assembly
④ Spring
② Spring
1.4 mm
TG3 guide roller assembly
Fig. A
1.4 mm
TG6 guide roller assembly
Fig. B

Fig. 3-8

2-4. TG8 ASSEMBLY (Refer to VHS Mechanical Adjustment Manual IV page 23)

- As the shape of TG8 assembly was changed, Section 3-13 is changed.

☛ : Chenged portion

3-13. TG8 ASSEMBLY (Fig. 3-15)

1) Remove TG7 tape retainer ① to pull out TG8 assembly ②.

[Note on Mounting]

- Apply FLOIL SG-055G (Jig Ref. No. J-12) to ☆ marked portion.
- Keep clean the surface contacts tape of TG8 assembly ②.
- Be careful not to change the shape of TG7 tape retainer ①.
- After attaching the TG7 tape retainer ①, check that side Ⓐ of ① is below side Ⓑ of the stepped-part of the TG7 shaft. (Fig. A)

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

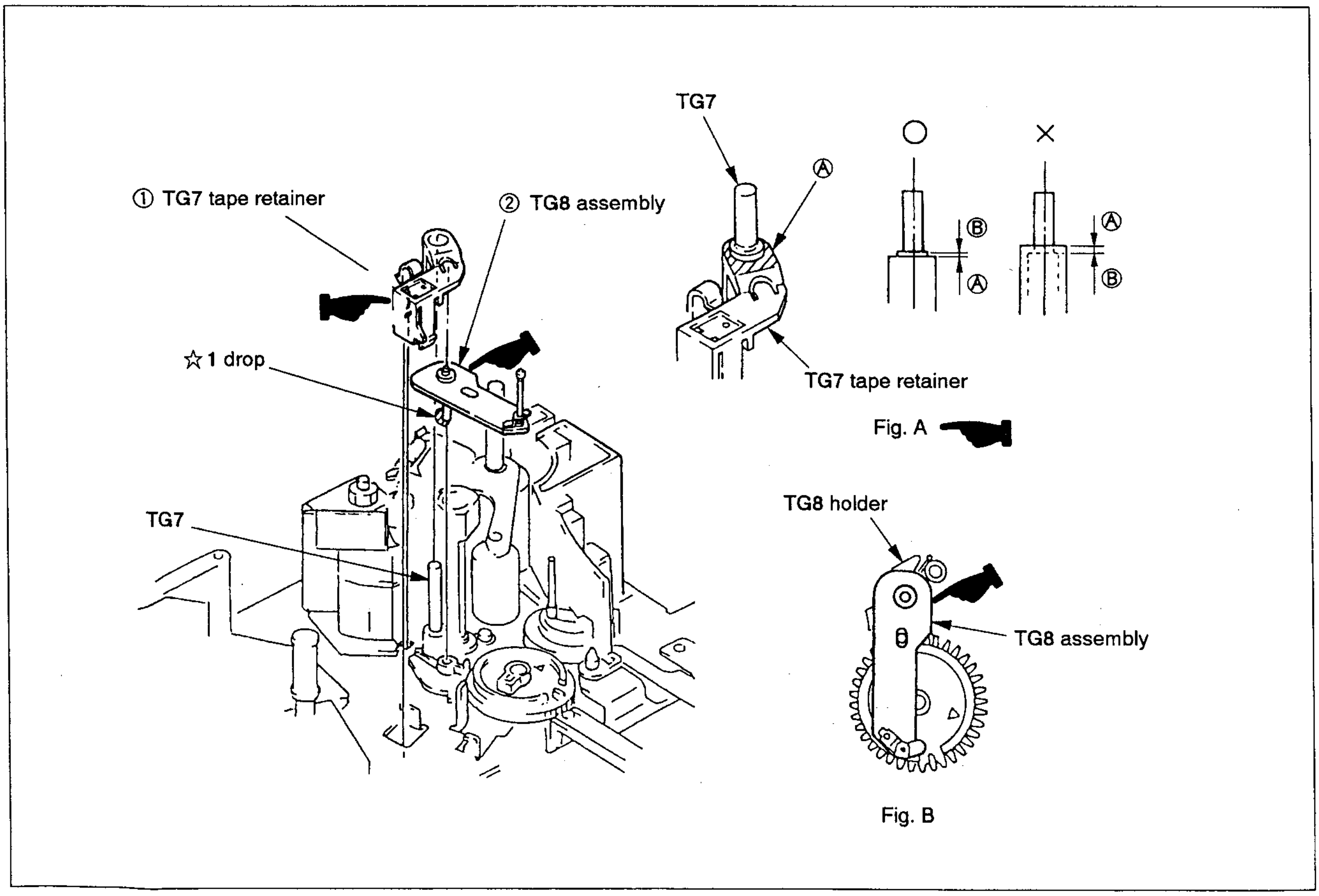

① TG7 tape retainer
② TG8 assembly
☆1 drop
TG7
TG7
Ⓐ
○
×
Ⓑ
Ⓐ
Ⓐ
Ⓑ
TG7 tape retainer
TG8 holder
TG8 assembly

Fig. A

Fig. B

Fig. 3-15

2-5. TENSION REGULATOR (TG1) POSITION/ TENSION ADJUSTMENT (Refer to VHS Mechanical Adjustment Manual IV page 35)

- As the tension regulator position and tension adjustment were changed, the tension adjustment and Fig. 4-1 are changed.

☛ : Changed portion

• Tension adjustment

Mode	Playback
Measuring instrument/tool	Torque cassette
Adjustment locations	Position for hooking the tension spring
Specified value	34 ± 4 g•cm ☛

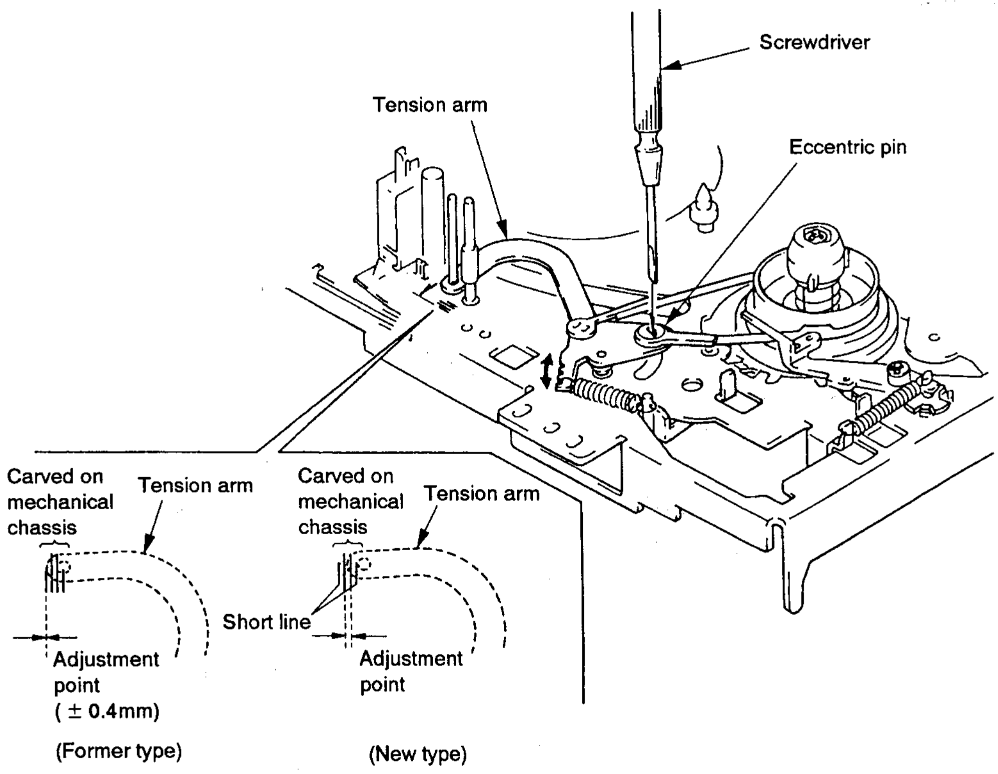

Screwdriver
Tension arm
Eccentric pin
Carved on mechanical chassis
Tension arm
Adjustment point
(± 0.4mm)
(Former type)
Carved on mechanical chassis
Tension arm
Short line
Adjustment point
(New type)

Fig. A ☛

Fig. 4-1

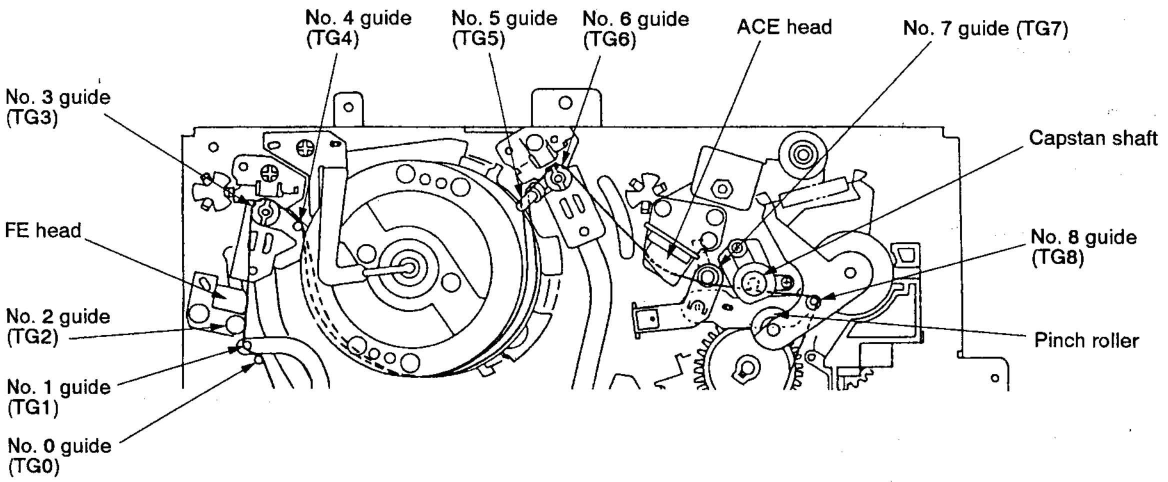
2-6. TG8 GUIDE ROLLER HEIGHT ADJUSTMENT (Refer to VHS Mechanical Adjustment Manual IV page 36)

- As the use of TG8 height adjusting screw was cancelled, section 4-1-2 is changed.

4-1-2. TG7 TAPE PATH ADJUSTMENT (Fig. 4-2)

[Adjustment Method]

1) Load a tape, and playback the tape in the CUE mode, confirm the distance between lower flange of No. 7 guide roller and lower side of tape (Fig. A).
2) Then, feeding the tape in the REV mode, confirm the distance between lower flange of No. 7 guide roller and lower side of tape.
3) If the tape height in the REV feed is higher that in the CUE playback (Fig. B), rotate the ACE head flapping adjust screw in the direction Ⓐ so that a difference in tape height between CUE mode and REV mode becomes zero.
4) If the tape height in the REV feed is lower that in the CUE playback (Fig. C), rotate the ACE head flapping adjust screw in the direction Ⓑ so that a difference in tape height between CUE mode and REV mode becomes zero.


No. 4 guide (TG4)
No. 5 guide (TG5)
No. 6 guide (TG6)
ACE head
No. 7 guide (TG7)
No. 3 guide (TG3)
Capstan shaft
FE head
No. 8 guide (TG8)
No. 2 guide (TG2)
Pinch roller
No. 1 guide (TG1)
No. 0 guide (TG0)

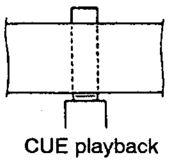
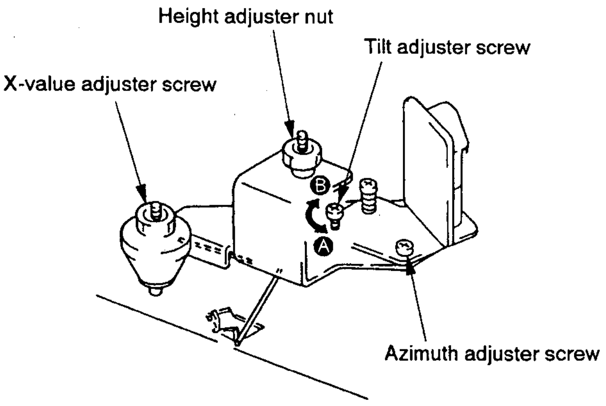

CUE playback

Fig. A


Height adjuster nut
Tilt adjuster screw
X-value adjuster screw
Ⓑ
Ⓐ
Azimuth adjuster screw

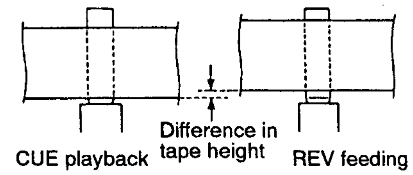

CUE playback
Difference in tape height
REV feeding

Fig. B

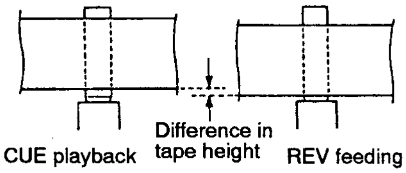

CUE playback
Difference in tape height
REV feeding

Fig. C

Fig. 4-2

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.
Published by Personal A&V Products Div.
Quality Engineering Dept.

VHS MECHANICAL ADJUSTMENT MANUAL IV

SONY

H MECHANISM

SERVICE MANUAL

SUPPLEMENT-3

File this supplement with the VHS mechanical adjustment IV and supplement-1, 2.

Subject: Mechanism chassis assembly changed.
PAL alignment tape changed.

(SL-600060)

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1. MODIFICATION

1-1. PARTS REQUIRING CLEANING (Refer to VHS Mechanical Adjustment Manual IV page 7)

- Parts requiring a cleaning were changed in shape, and therefore, Fig. 2-1 for new type is added.

☞: Modificated portion

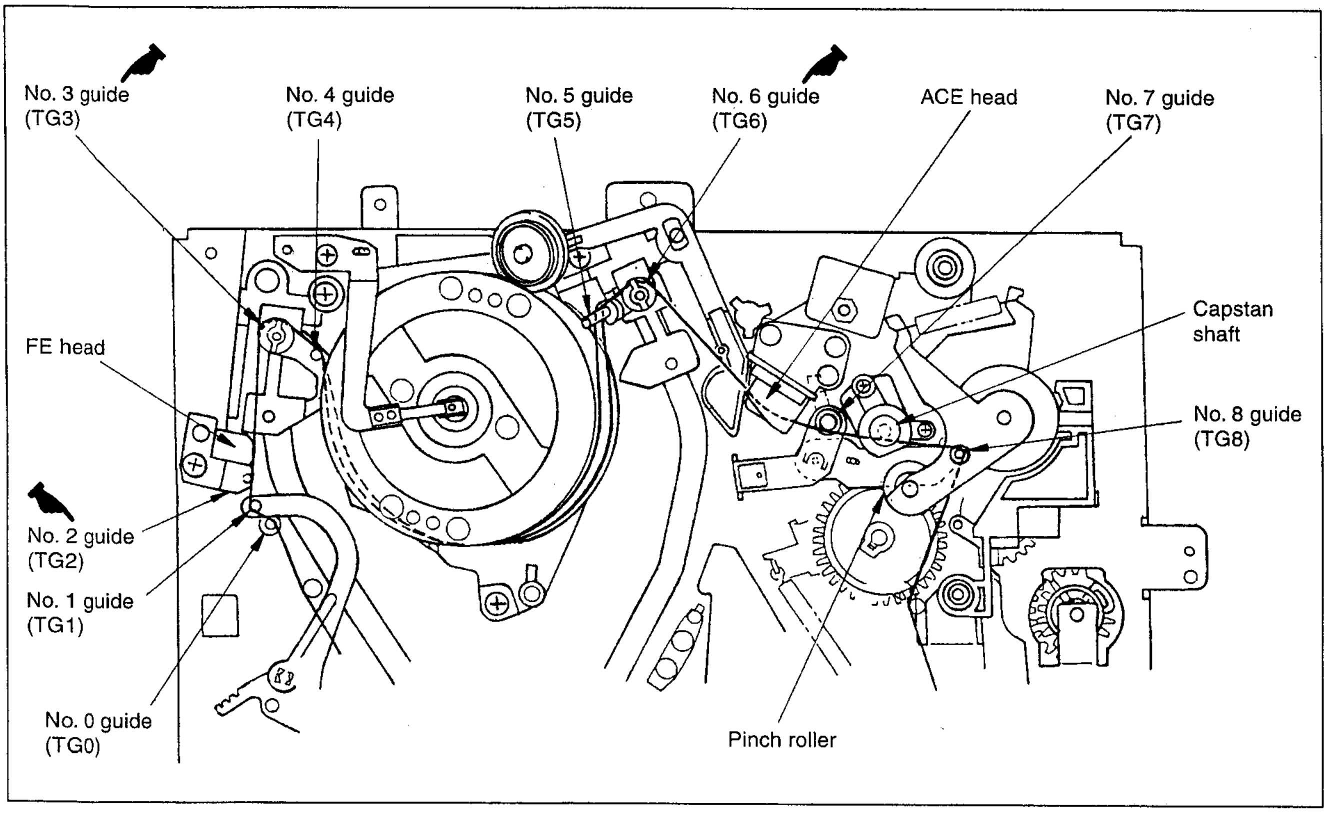

No. 3 guide (TG3)
No. 4 guide (TG4)
No. 5 guide (TG5)
No. 6 guide (TG6)
ACE head
No. 7 guide (TG7)
Capstan shaft
No. 8 guide (TG8)
FE head
No. 2 guide (TG2)
No. 1 guide (TG1)
No. 0 guide (TG0)
Pinch roller

Fig. 2-1 Parts Requiring Cleaning

1-2. DRUM ASSEMBLY, DRUM BASE (Refer to VHS Mechanical Adjustment Manual IV page 11)

- The ground shaft assembly was changed and the drum base was added, and therefore Section 3-2 for new type is added.

3-2. DRUM ASSEMBLY, DRUM BASE (Fig. 3-2)

1) Remove screw ①.
2) Remove ground shaft assembly ② not to touch its tip with bare hand or tools.
3) Remove screws ③ to remove drum assembly ④.
4) Remove screws ⑤ to remove drum base ⑥.

[Note on Mounting]

- Don't touch head chips and ground shaft assembly ④ with bare hand or tools.
- Keep clean the surface contacts tape of drum assembly ④.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.

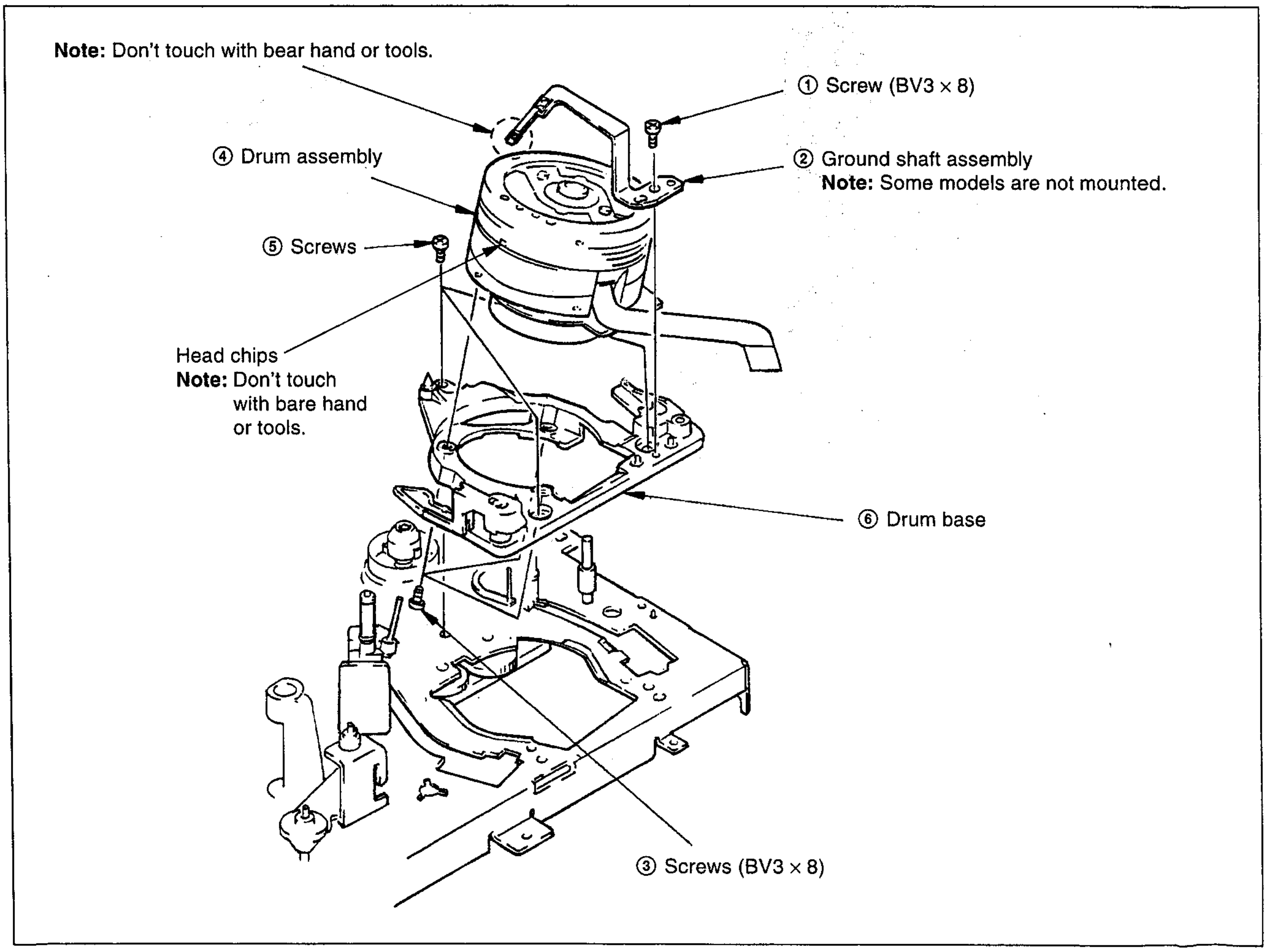

Note: Don't touch with bear hand or tools.
① Screw (BV3 x 8)
④ Drum assembly
② Ground shaft assembly
Note: Some models are not mounted.
⑤ Screws
Head chips
Note: Don't touch with bare hand or tools.
⑥ Drum base
③ Screws (BV3 x 8)

Fig. 3-2

1-3. TG2 ROLLER, FE HEAD ASSEMBLY (Refer to VHS Mechanical Adjustment Manual IV page 14)

- The TG2 roller was assembled in the FE head assembly, and therefore Section 3-5 for new type is added.

3-5. TG2 ROLLER, FE HEAD ASSEMBLY (Fig. 3-5)

1) Remove screw ①.
2) Pull out FE head assembly ②.

[Note on Mounting]

- Keep clean the surface contacts tape of TG2 roller.

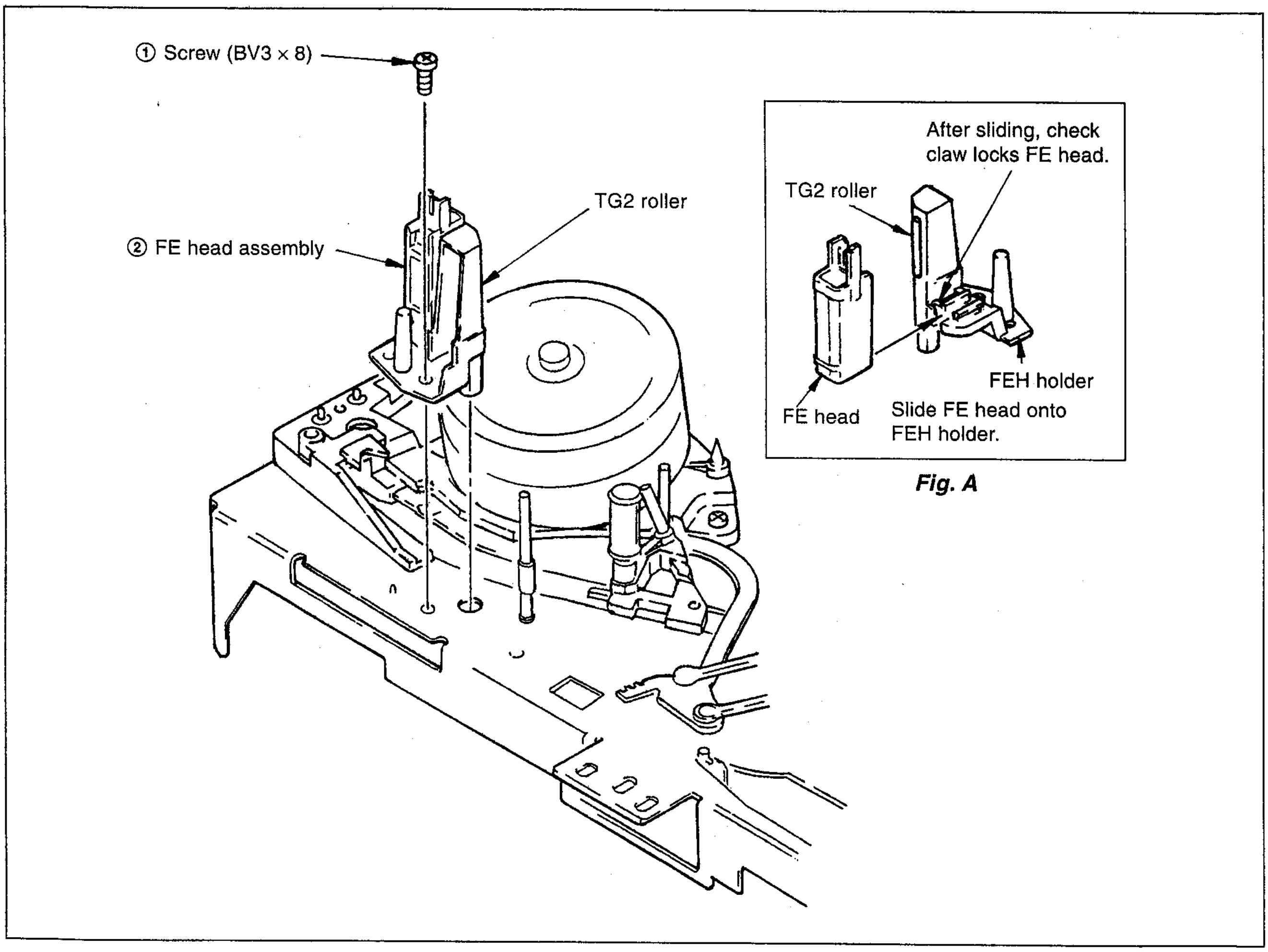

① Screw (BV3 × 8)
② FE head assembly
TG2 roller
After sliding, check claw locks FE head.
TG2 roller
FEH holder
FE head
Slide FE head onto FEH holder.

Fig. A

Fig. 3-5

1-4. TG3, TG6 GUIDE ROLLER ASSEMBLIES (Refer to VHS Mechanical Adjustment Manual IV page 17)

- The TG3 and TG6 guide roller assemblies were changed, and therefore Section 3-8 for new type is added.

3-8. TG3, TG6 GUIDE ROLLER ASSEMBLIES (Fig. 3-8)

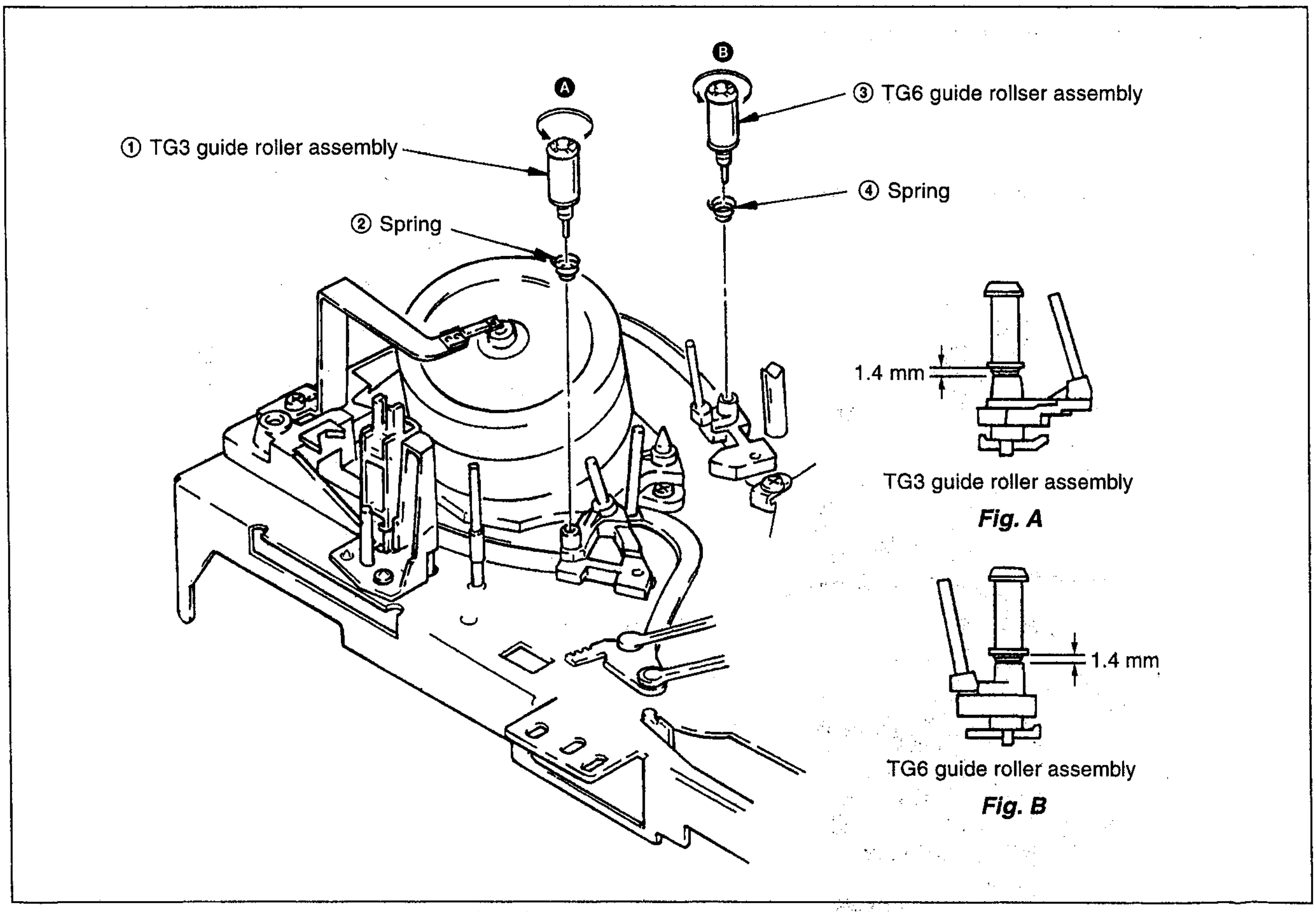
1) TG3 guide roller assembly ① by turning it in the arrow Ⓐ direction.
2) Removal the spring ②.
3) TG6 guide roller assembly ③ by turning it in the arrow Ⓑ direction.
4) Removal the spring ④.

[Note on Mounting]

- Keep clean the surface contacts tape of TG3 and TG6 guide roller assemblies ①, ③.

[Adjustment after Mounting]

- 4-1. Tape path adjustment.


Ⓑ
Ⓐ
③ TG6 guide rollser assembly
① TG3 guide roller assembly
④ Spring
② Spring
1.4 mm
1.4 mm

TG3 guide roller assembly

Fig. A

TG6 guide roller assembly

Fig. B

Fig. 3-8

1-5. SHUTTLE T BLOCK AND LOADING GEAR T BLOCK ASSEMBLIES (Refer to VHS Mechanical Adjustment Manual IV page 29)

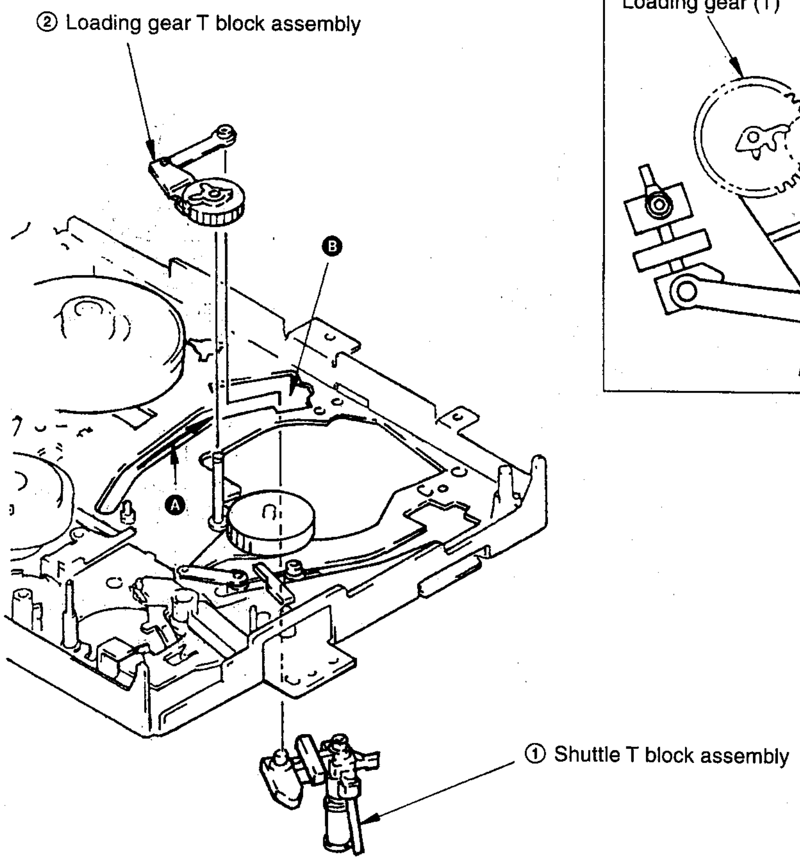
- The shuttle T block and loading gear T block assemblies were changed, and therefore Section 3-19 for new type is added.

3-19. SHUTTLE T BLOCK AND LOADING GEAR T BLOCK ASSEMBLIES (Fig. 3-21)

1) Remove drum assembly and drum base. (Refer to 3-2.)
2) Remove timing belt. (Refer to 3-3.)
3) Remove CAP brake assembly. (Refer to 3-4.)
4) Remove cam motor chassis block assembly. (Refer to 3-18.)
5) Remove main slider. (Refer to 3-20.)
6) Sliding the shuttle T block assembly ① toward the direction Ⓐ, remove it through the hole Ⓑ.
7) Pull out loading gear T block assembly ②.

[Note on Mounting]

- Adjust the phase Ⓒ between loading gear (T) and loading gear (S). (Fig. A)
- Keep clean the surface contacts tape of shuttle T block assembly ①.


② Loading gear T block assembly
Ⓑ
Ⓐ
① Shuttle T block assembly

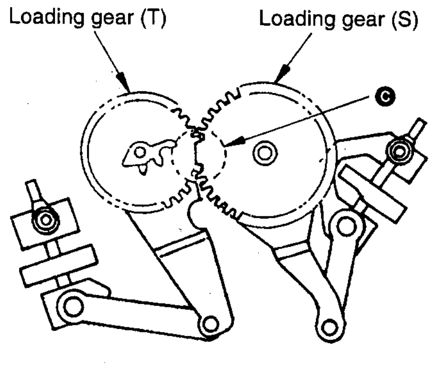

Loading gear (T)
Loading gear (S)
Ⓒ

Fig. A

Fig. 3-21

1-6. SHUTTLE S BLOCK AND LOADING GEAR S BLOCK ASSEMBLIES (Refer to VHS Mechanical Adjustment Manual IV page 30)

- The shuttle S block and loading gear S block assemblies were changed, and therefore Section 3-20 for new type is added.

3-20. SHUTTLE S BLOCK AND LOADING GEAR S BLOCK ASSEMBLIES (Fig. 3-22)

1) Remove drum assembly and drum base. (Refer to 3-2.)
2) Remove timing belt. (Refer to 3-3.)
3) Remove CAP brake assembly. (Refer to 3-4.)
4) Remove cam motor chassis block assembly. (Refer to 3-18.)
5) Remove main slider. (Refer to 3-20.)
6) Sliding the shuttle S block assembly ① toward the direction Ⓐ, remove it through the hole Ⓑ.
7) Pull out loading gear S block assembly ②.

[Note on Mounting]

- Adjust the phase Ⓒ between loading gear (S) and loading gear (S). (Fig. A)
- Keep clean the surface contacts tape of shuttle S block assembly ①.

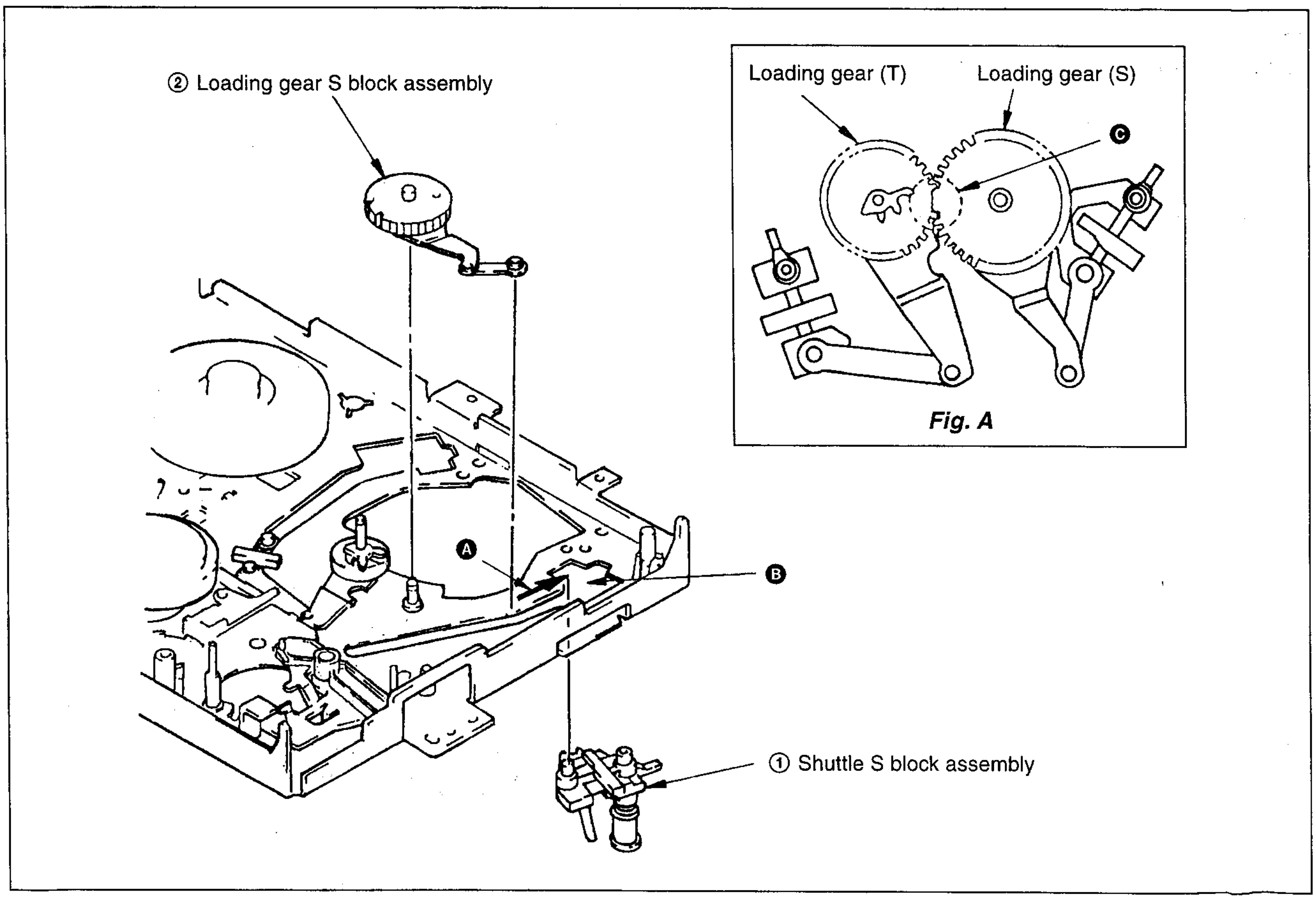

② Loading gear S block assembly
Loading gear (T)
Loading gear (S)
Ⓒ
Fig. A
Ⓐ
Ⓑ
① Shuttle S block assembly

Fig. 3-22

2. ADJUSTING THE MECHANISM USING NEW ALIGNMENT TAPE (KRV-52PL for PAL)

The conventional alignment tape (For PAL) is now replaced with alignment tape KRV-52PL, and the following describes how to align the mechanism using the KRV-52PL. For details on the use of KRV-51P for each model, refer to the service manuals which will be issued in the future.

Name	Parts No.	Remarks
Alignment tape KRV-52PL for PAL	8-192-605-46	For tape path, audio azimuth, and X-value adjustments
Alignment tape KRV-51P for PAL	8-192-605-36	For electrical adjustments (RF, AF, and switching position) and operation check

Contents:
KRV-52PL (PAL)

Time	Video	Audio
20 min.	Recording only at 1 MHz, A-ch. EP mode RF skipping once per 5 frames	4 kHz full tracks

KRV-51P (PAL)

Class	Mode	Time	Video	Audio (HiFi/Normal)
1	SP	7 min.	Color bar	400 Hz
2	SP	3 min.	Mono. scope	400 Hz
3	EP	7 min.	Color bar	400 Hz
4	EP	3 min.	Mono. scope	400 Hz

2-1. HEIGHT ADJUSTMENT OF GUIDE ROLLERS NO. 3 AND NO. 6

Mode	Playback
Signal	Alignment tape KRV-52PL (For PAL)
Measuring instrument	Oscilloscope TIM/DIV: 2ms Trigger source: CH2 Trigger slope: +
Measuring point	CH-1: Connector PB RF pin for RF PC board check CH-2: Connector RF SWP pin for RF PC board check
Adjustment locations	Height adjustment screw for No. 3 tape guide roller Height adjustment screw for No. 6 tape guide roller

[Adjustment Method]

1) Deactivate the automatic tracking control, and set the tracking control at the center position. To set the tracking control at the center position for the VCRs equipped with the ▲ and ▼ tracking control keys, press both the ▲ and ▼ tracking control keys at the same time. For the VCRs not equipped with the tracking control keys, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).
2) Turn the height adjustment screws of tape guide rollers No. 3 and No. 6 so that the RF output envelope becomes as flat as possible.
3) Press the ▲ tracking control key, and check that both the beginning and end of the RF output change together the same in amplitude.
4) Press the ▼ tracking control key, and check that both the beginning and end of the RF output change together the same in amplitude.

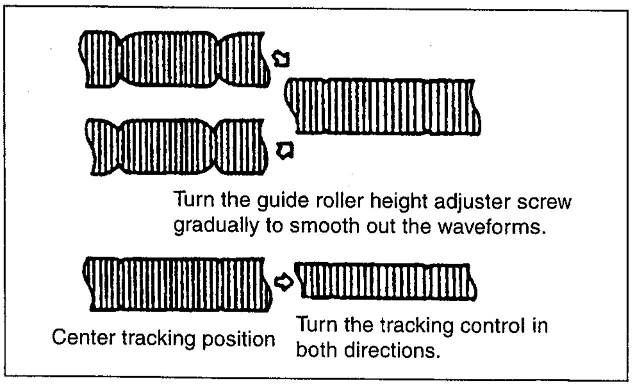

Turn the guide roller height adjuster screw gradually to smooth out the waveforms.
Center tracking position
Turn the tracking control in both directions.

Fig. 2-1

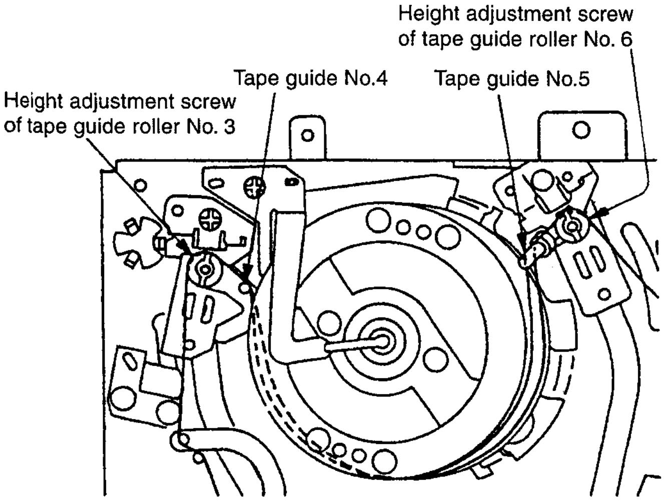

Height adjustment screw of tape guide roller No. 6
Tape guide No.4
Tape guide No.5
Height adjustment screw of tape guide roller No. 3

Fig. 2-2

2-2. ACE HEAD ASSEMBLY ADJUSTMENT (ROUGH ADJUSTMENT) (Figs. 2-3 and 2-4)

Purpose: Allows the tape to make even contract with the head for recording and playback of the specified track.

Mode	Playback
Jig	Blank tape
Adjustment locations	Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Mount the ACE head assembly. AT this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or rise up noticeably near the ACE head.
4) If the tape curls up or rises noticeably, readjust the tilt adjuster screw and the height adjuster nut.
(The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

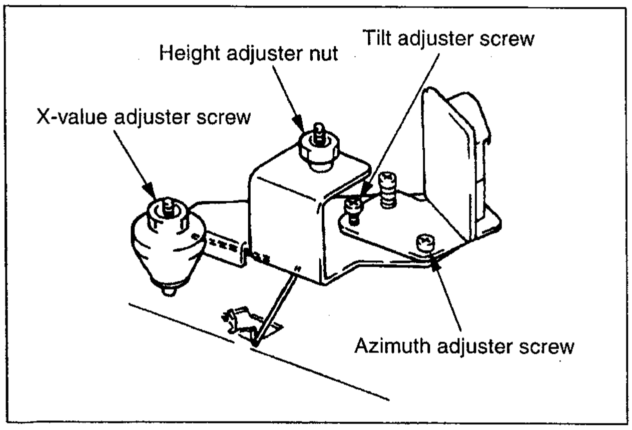

Height adjuster nut
Tilt adjuster screw
X-value adjuster screw
Azimuth adjuster screw

Fig. 2-3

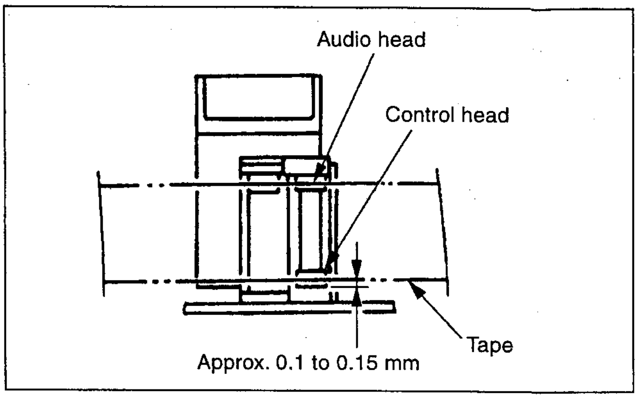

Audio head
Control head
Tape
Approx. 0.1 to 0.15 mm

Fig. 2-4

2-3. ACE HEAD ASSEMBLY ADJUSTMENT (PRECISION ADJUSTMENT)

Mode	Playback
Signal	Alignment tape (KRV-52PL 4 kHz) (For PAL)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw, Height adjuster nut, Tilt adjuster screw

[Adjustment Method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or rise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

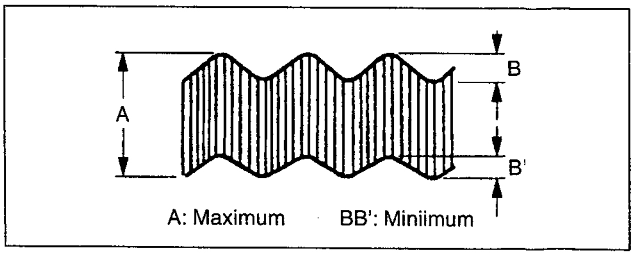

A
B
B'
A: Maximum
BB': Miniimum

Fig. 2-5

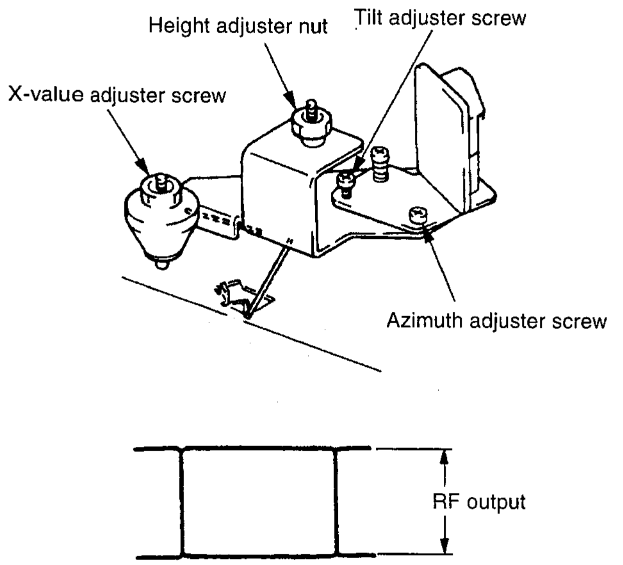
Note: In the adjustment of ACE head assembly (coarse adjustment and fine adjustment), if a azimuth, height and tilt were adjusted, again adjust the height of No. 3 and No. 6 guide rollers.

2-4. X-VALUE ADJUSTMENT

Purpose: To obtain compatibility with other VCRs.

Precaution: Before starting to adjust X-value, set the tracking control at the center position. To set the tracking control at the center position for the VCRs equipped with the ▲ and ▼ tracking control keys, press both the ▲ and ▼ tracking control keys at the same time. For the VCRs not equipped with the tracking control keys, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).

Mode	Playback
Signal	Alignment tape KRV-52PL
Measuring instrument	Oscilloscope TIM/DIV: 2ms Trigger source: CH2 Trigger slope: +
Measuring point	CH-1: Connector PB RF pin for RF PC board check CH-2: Connector RF SWP pin for RF PC board check
Adjustment locations	X-value adjuster screw



RF output shall be maximum at the center position of the tracking control.

Fig. 2-6

[Adjustment Method]
Set the tracking control at the center position. For the VCRs equipped with narrow gap video heads, set the X-value adjustment screw where a maximum RF output is obtained. For the VCRs equipped with wide gap video heads, set the X-value adjustment screw both where a maximum RF output is obtained and where the RF output decreases immediately when the ▼ tracking control key is pressed.

1. Adjusting X-value

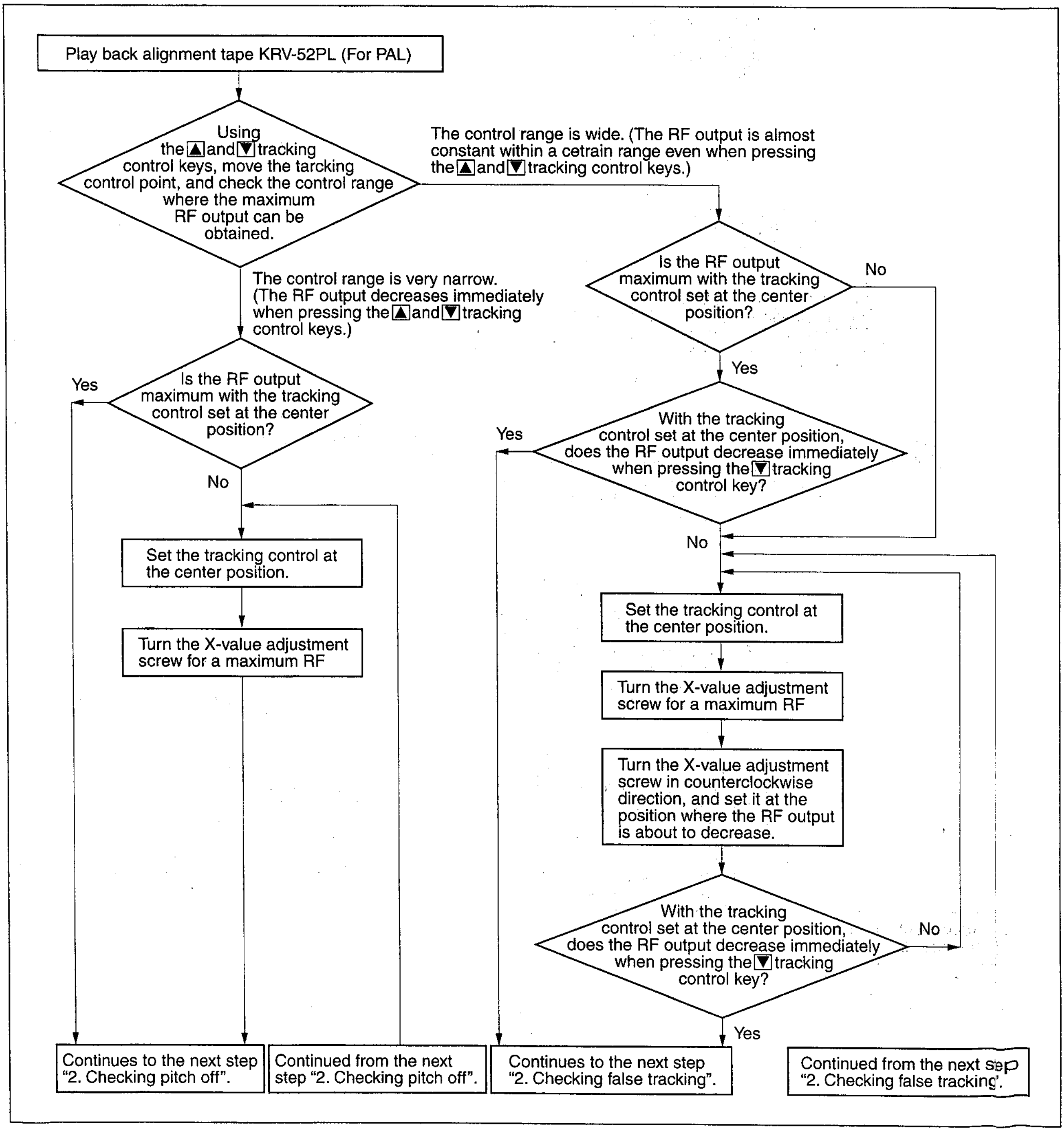
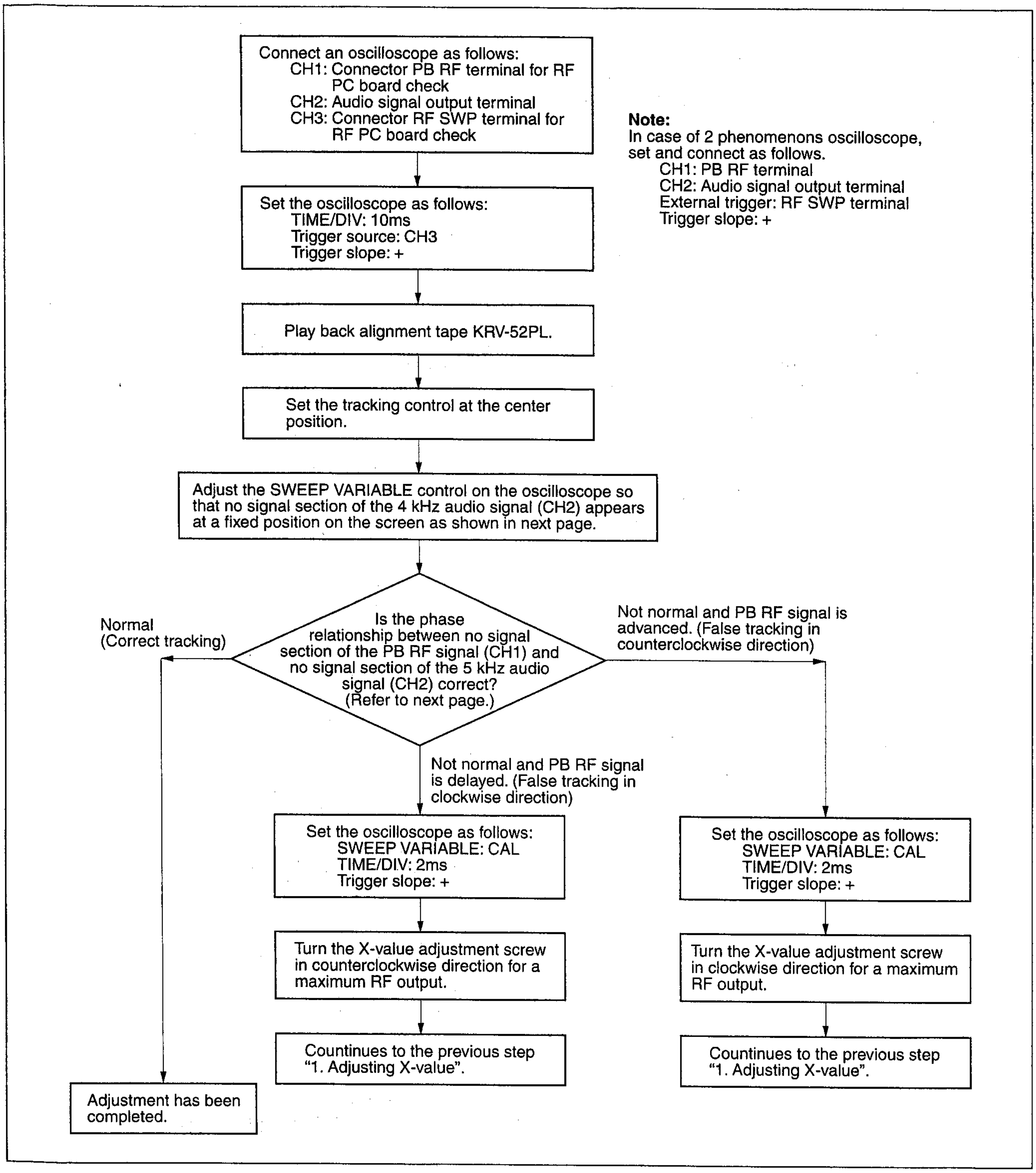

Play back alignment tape KRV-52PL (For PAL)
Using the ▲ and ▼ tracking control keys, move the tarcking control point, and check the control range where the maximum RF output can be obtained.
The control range is wide. (The RF output is almost constant within a cetrain range even when pressing the ▲ and ▼ tracking control keys.)
The control range is very narrow. (The RF output decreases immediately when pressing the ▲ and ▼ tracking control keys.)
Is the RF output maximum with the tracking control set at the center position?
Yes
No
Set the tracking control at the center position.
Turn the X-value adjustment screw for a maximum RF
Is the RF output maximum with the tracking control set at the center position?
No
Yes
With the tracking control set at the center position, does the RF output decrease immediately when pressing the ▼ tracking control key?
Yes
No
Set the tracking control at the center position.
Turn the X-value adjustment screw for a maximum RF
Turn the X-value adjustment screw in counterclockwise direction, and set it at the position where the RF output is about to decrease.
With the tracking control set at the center position, does the RF output decrease immediately when pressing the ▼ tracking control key?
No
Yes
Continues to the next step "2. Checking pitch off".
Continued from the next step "2. Checking pitch off".
Continues to the next step "2. Checking false tracking".
Continued from the next step "2. Checking false tracking".

Fig. 2-7

2. Checking false tracking


Normal
(Correct tracking)
Not normal and PB RF signal is advanced. (False tracking in counterclockwise direction)
Not normal and PB RF signal is delayed. (False tracking in clockwise direction)

Connect an oscilloscope as follows:
CH1: Connector PB RF terminal for RF PC board check
CH2: Audio signal output terminal
CH3: Connector RF SWP terminal for RF PC board check

Set the oscilloscope as follows:
TIME/DIV: 10ms
Trigger source: CH3
Trigger slope: +

Play back alignment tape KRV-52PL.

Set the tracking control at the center position.

Adjust the SWEEP VARIABLE control on the oscilloscope so that no signal section of the 4 kHz audio signal (CH2) appears at a fixed position on the screen as shown in next page.

Is the phase relationship between no signal section of the PB RF signal (CH1) and no signal section of the 5 kHz audio signal (CH2) correct? (Refer to next page.)

Set the oscilloscope as follows:
SWEEP VARIABLE: CAL
TIME/DIV: 2ms
Trigger slope: +

Turn the X-value adjustment screw in counterclockwise direction for a maximum RF output.

Countinues to the previous step "1. Adjusting X-value".

Set the oscilloscope as follows:
SWEEP VARIABLE: CAL
TIME/DIV: 2ms
Trigger slope: +

Turn the X-value adjustment screw in clockwise direction for a maximum RF output.

Countinues to the previous step "1. Adjusting X-value".

Adjustment has been completed.

Note:
In case of 2 phenomenons oscilloscope, set and connect as follows.
CH1: PB RF terminal
CH2: Audio signal output terminal
External trigger: RF SWP terminal
Trigger slope: +

Fig. 2-8

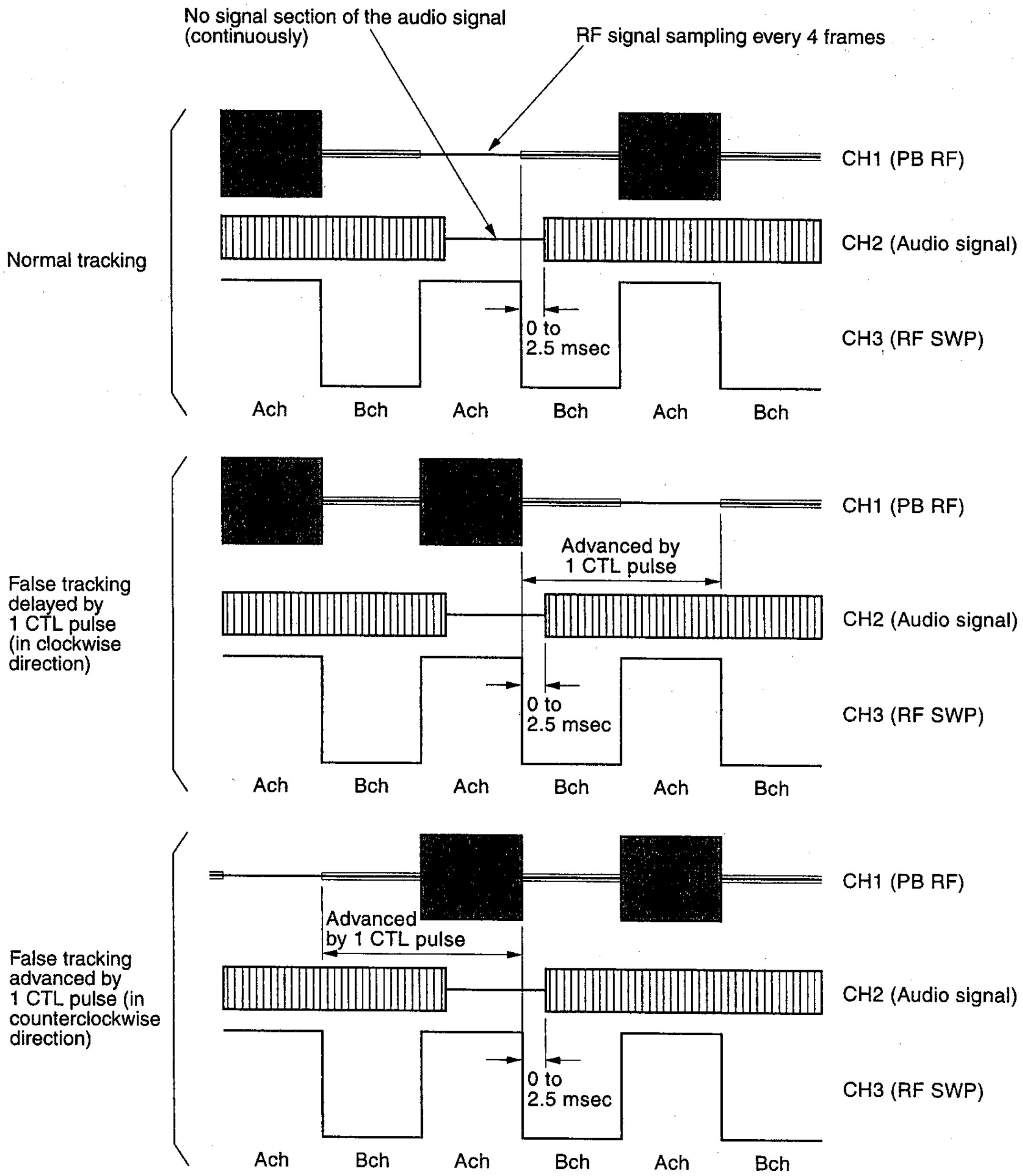

No signal section of the audio signal (continuously)
RF signal sampling every 4 frames
Normal tracking
CH1 (PB RF)
CH2 (Audio signal)
CH3 (RF SWP)
0 to 2.5 msec
Ach
Bch
Ach
Bch
Ach
Bch
False tracking delayed by 1 CTL pulse (in clockwise direction)
Advanced by 1 CTL pulse
CH1 (PB RF)
CH2 (Audio signal)
CH3 (RF SWP)
0 to 2.5 msec
Ach
Bch
Ach
Bch
Ach
Bch
False tracking advanced by 1 CTL pulse (in counterclockwise direction)
Advanced by 1 CTL pulse
CH1 (PB RF)
CH2 (Audio signal)
CH3 (RF SWP)
0 to 2.5 msec
Ach
Bch
Ach
Bch
Ach
Bch

Fig. 2-9

2-5. ADJUSTMENT AFTER REPLACING THE DRUM (VIDEO HEAD)

Purpose: Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Note 1: Deactivate the automatic tracking control for setting the mechanism in manual tracking control mode.

Note 2: To set the tracking control at the center position, deactivate the automatic tracking control by pressing the tracking AUTO/MANUAL key on the remote control unit during threading operation (after a tape is inserted but before the VCR starts playing back the tape).

Mode	Playback
Signal	Alignment tape KRV-52PL (For PAL), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1: Connector PB RF pin for RF PC board check. CH-2: Connector RF SWP pin for RF PC board check.
Adjustment locations	Guide roller (Refer to 2-1.) Switching position (Refer to the Service Manual) X-value (Refer to 2-3.)

[Adjustment Method]

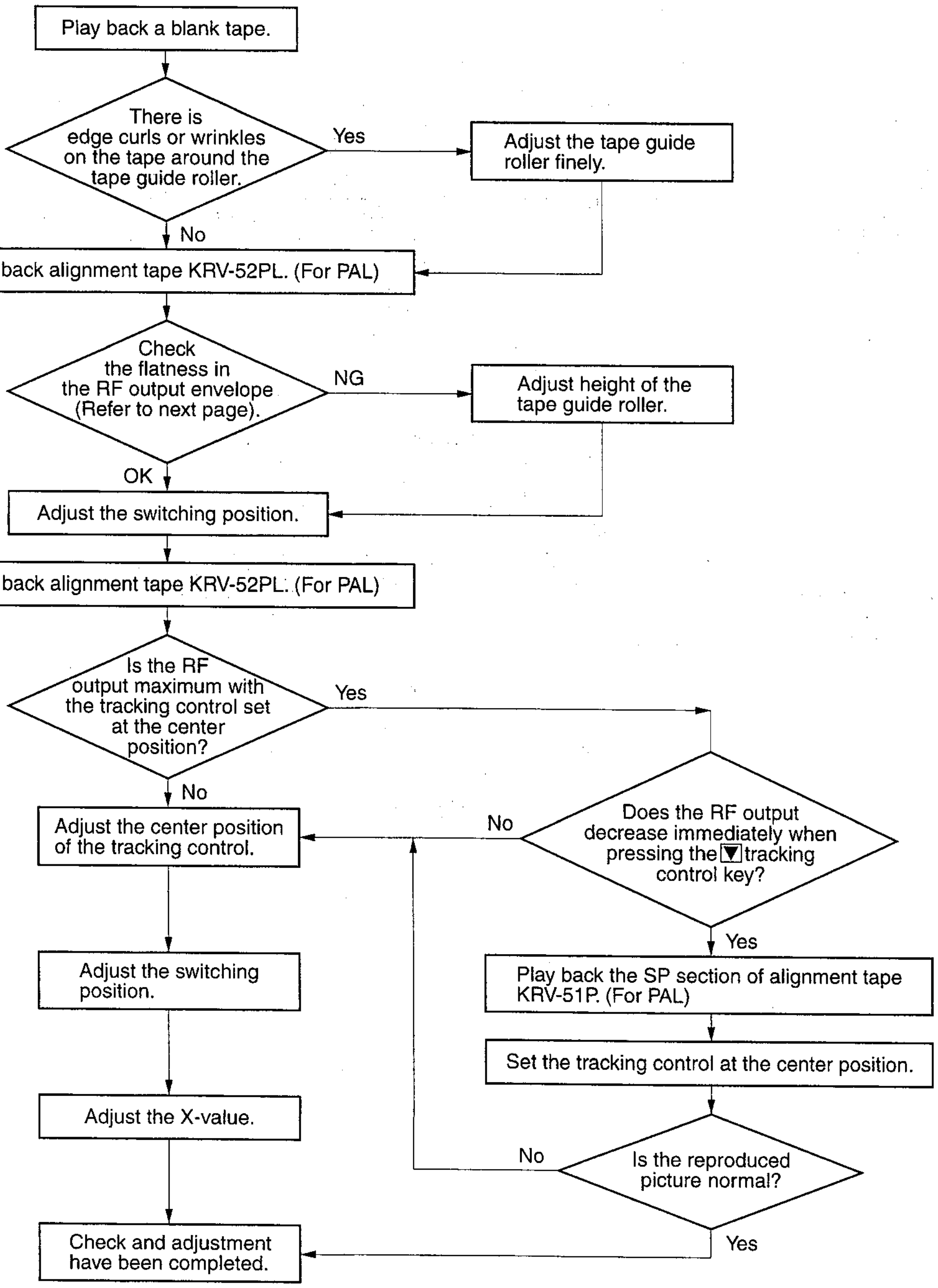
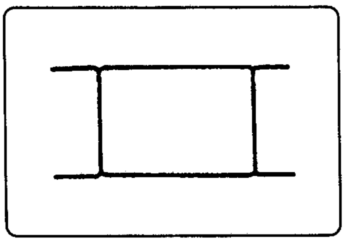

Play back a blank tape.
There is edge curls or wrinkles on the tape around the tape guide roller.
Yes
Adjust the tape guide roller finely.
No
Play back alignment tape KRV-52PL. (For PAL)
Check the flatness in the RF output envelope (Refer to next page).
NG
Adjust height of the tape guide roller.
OK
Adjust the switching position.
Play back alignment tape KRV-52PL. (For PAL)
Is the RF output maximum with the tracking control set at the center position?
Yes
No
Does the RF output decrease immediately when pressing the ▼ tracking control key?
No
Adjust the center position of the tracking control.
Yes
Play back the SP section of alignment tape KRV-51P. (For PAL)
Adjust the switching position.
Set the tracking control at the center position.
Adjust the X-value.
No
Is the reproduced picture normal?
Yes
Check and adjustment have been completed.

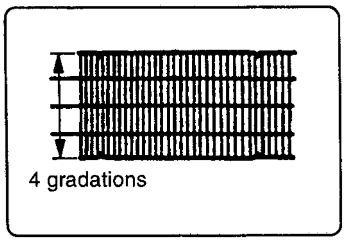
Fig. 2-10

[Checking the evenness and fluctuation of the RF output]

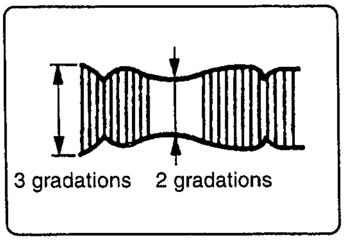
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) AT this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

Fig. 2-11